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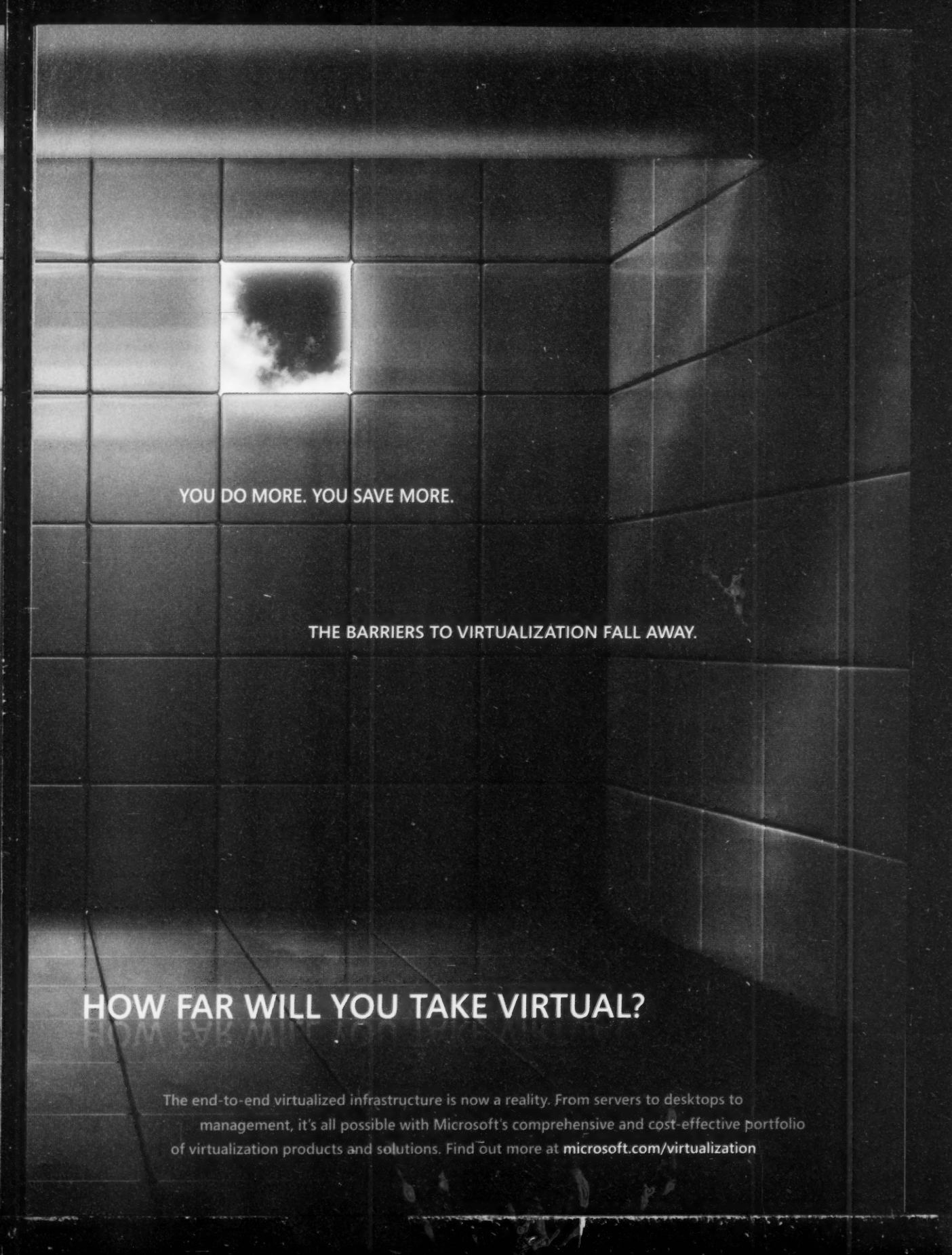
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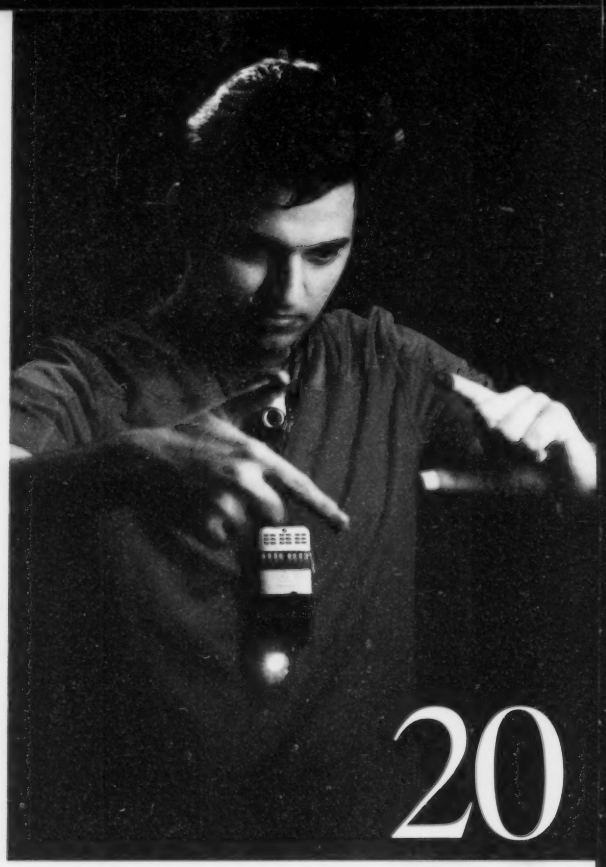


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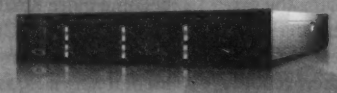

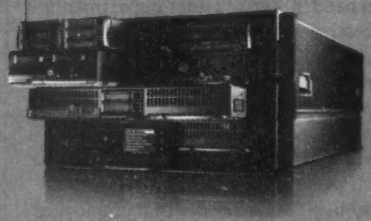

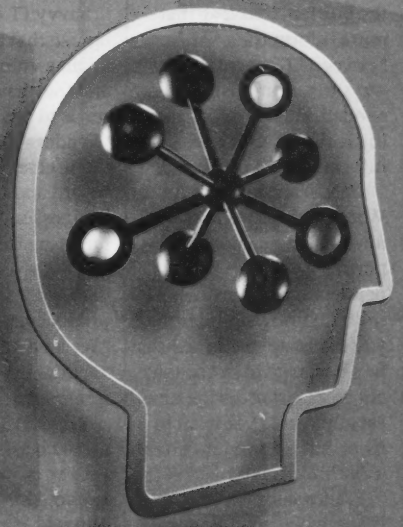

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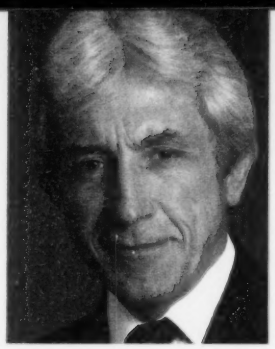
■ EDITOR'S NOTE

Don Tennant

# Fingers Crossed



THE SHORTSIGHTEDNESS is astonishing. Companies are panicking, and they're taking drastic steps to cut costs. But rather than bothering to seek out hidden costs, many are looking no further than a number on a spreadsheet, and they're cutting their people. What should be an absolute last resort has become, in far too many cases, an expedient first response.

I hear from a lot of IT workers who are frustrated that their companies aren't doing more to force vendors to shoulder more of the burden. It's clear that more information-sharing between IT executives on ways to accomplish that is needed. What's encouraging is that there's plenty of information to be shared.

Dale Frantz, CIO at Auto Warehousing Co., is in the unenviable position of supporting a business that's dependent on the fortunes of the automotive industry, so you can imagine the lengths he's had to go to in order to cut costs. Frantz is the nicest guy you'd ever want to meet, but his vendors probably think otherwise.

Frantz said that in many cases, when vendors refuse to renegotiate, he just cancels the contract. He exercised a performance clause, for example, to cancel the contract for his MPLS communications link between the U.S. and Canada. He's also reducing technical support coverage for some noncritical systems from 24/7/365 to weekdays from 8 a.m. to 8 p.m. — a relatively minimal increase in risk, considering the savings it's generating.

Savvy IT executives recognize that their vendors are in a vulnerable position, and they have the business sense to seize the moment. "Vendors that once held themselves in the highest regard and treated midsize businesses as dirt are now targeting this sector," said Steve Romeo, vice president of IT at orthopedic product supplier Breg Inc. "We have the attention of vendors in a way we've never seen before."

Vendors are hurting as much as customers, so they're doing their utmost to avoid having to renegotiate, said Manjit Singh, CIO at Chiquita Brands International. "However, when faced with an 'all [lost] or *something* [retained]' situation, many are willing to become more flexible."

**■ The large vendors are starting to buckle. Even Microsoft is getting the message.**

Mike Twohig, CIO at Clean Harbors Environmental Services, said the larger vendors have been slower to react, so you need to be a little more aggressive to get their attention. "We have one very large vendor who will be losing over $500,000 in sales because they would not negotiate on a product for which we have alternatives," Twohig said. "Their first reaction was disbelief," but they're beginning to understand that they have to reconsider their pricing structure.

"In the past, these large vendors have been considered 'partners,' " Twohig said. "But those that are slow to respond have been informed that they are slipping back to just a 'vendor' that we consider a cost center."

There's no question that the large vendors are starting to buckle. Even Microsoft is getting the message. Just last week, *Computerworld*'s Eric Lai reported that Microsoft is cutting the cost of its Software Assurance agreements by as much as 26%.

That brings us back to Auto Warehousing. You may recall that two years ago, Frantz began a sweeping migration from Microsoft to Apple systems because he'd been so badly jerked around by Microsoft's software licensing apparatchiks. To date, that move has saved roughly $1 million in license fees.

What that has meant is that despite the collapse of the auto industry, the number of layoffs of IT personnel at Auto Warehousing stands at zero. That's right. Zero. "Other departments and divisions have had layoffs," Frantz said, "but we've cut enough out of our budget . . . to keep all of our people."

For Frantz, layoffs would be the last resort, and you can be sure that employees will remember that when the economy turns around. "There's been some movement in the auto industry . . . that shows a glimmer of hope," Frantz said. "Keep your fingers crossed."

I told him I would. But I'll be hoping even more that IT pros everywhere will follow his example. ■

**Don Tennant** *is* Computerworld's *senior editor-at-large. You can contact him at don_tennant@computerworld.com, and visit his blog at* http://blogs.computerworld.com/tennant.

## Problems Won't Be Solved by a Select Few

I was introduced to *Computerworld* in the mid-'90s when I dug it out of the trash of different executives at the company I worked at. I was the only one who regularly read it, although it didn't get sent to me.

When I left that company, I was forced to glean what I could from *Computerworld*'s Web site. I make it a regular practice to look over the opinions and to read certain authors, including Don Tennant. I find his columns interesting if not insightful.

While I totally agree with the premise of his March 2 column, "Unwinding the Mess," I found the end very offensive. I doubt that I will ever be in IT management — I would rather work with the machines.

Because I have little if any buying power, I will never be one of the 165,000 anointed to receive the paper edition of your magazine. But please do not try to feed us the load of garbage that *Computerworld* goes to the enlightened few who recognize the problems that must be fixed in the human area of IT and are willing and able to do so.

■ **Levi Knox,** *systems analyst, Cañon City, Colo.*

## Diversity of Thought Is a Must in the Workplace

In his March 2 editorial, "Unwinding the Mess," Don Tennant came close to hitting the nail on the head regarding the necessity of articles like those on Earl Pace.

If the country is to pull itself out of the current recession, we will need tremendous initiative, creativity, hard work and, most importantly, innovation. Innovation springs from diversity; diversity of thought, culture, technology and heritage are absolutely essential if the U.S. is to continue to be a world leader.

Diversity in the workplace brings diversity of thought. This is the rational aspect of having a diverse organization, one that should appeal to readers like the one who wanted the racial discussion stopped.

■ **Don Arney,** *professor and dean, School of Technology, Ivy Tech Community College, Terre Haute, Ind.*

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### What's Behind the Rash of University Data Breaches?

**Privacy expert Jay Cline examines the multiple factors that are contributing to the security problem.**

### Living With Linux, Round 2

**Installation problems bedeviled Preston Gralla's first foray into the world of Linux. After getting lots of advice about what to do, he reports on the results.**


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# News Digest

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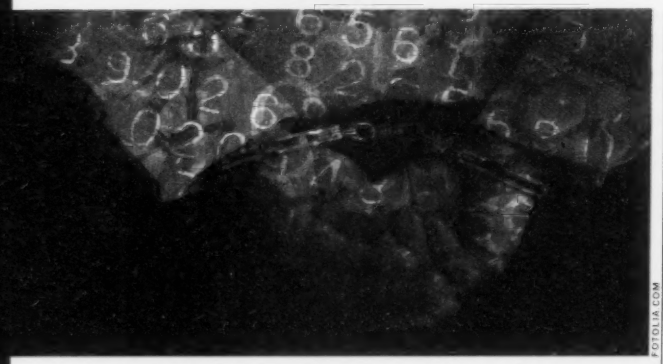
## THE WEEK AHEAD

**MONDAY:** Cisco is scheduled to announce a set of data center technologies (see story below).

**WEDNESDAY:** Microsoft's MIX09 conference for Web site designers and developers opens in Las Vegas.

**WEDNESDAY:** Oracle plans to report its Q3 financial results.

**THURSDAY:** The U.S. Senate's commerce committee is scheduled to hold a hearing on federal cybersecurity efforts.



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GOVERNMENT

## Fed CIO Takes Leave After Arrest of Ex-Subordinate

JUST ONE week after being named the federal government's first-ever CIO, Vivek Kundra took a leave from that job last Thursday, following the bribery-related arrests of a former subordinate in the District of Columbia's IT department and the CEO of an outsourcing contractor.

The FBI arrested the two men and raided the district government's IT offices, which Kundra oversaw as chief technology officer until President Obama named him federal CIO on March 5.

There was nothing in the court documents released at the arraignment of the arrested men to indicate that Kundra had any knowledge of their alleged illegal activities. However, the White House confirmed that Kundra is taking a leave of absence; an administration official who asked not to be named wouldn't discuss the reasons for the leave or say how long it might last.

FBI agents said they found $70,000 in cash in the Washington home of Kundra's onetime subordinate Yusuf Acar after arresting him on bribery charges. Acar, who is the district's acting chief security officer, was ordered to be held without bail after prosecutors said they were concerned that he would try to flee the U.S.

Vivek Kundra

Also arrested was Sushil Bansal, CEO of Advanced Integrated Technologies Corp., a Washington-based offshore outsourcing vendor that has won more than $13 million worth of contracts from the district's government since 2004, according to court documents. Some were awarded after Kundra became CTO in 2007.

In an affidavit, prosecutors alleged that Acar submitted purchase orders to AITC for larger quantities of products than were actually delivered. For instance, the affidavit cited AITC's purchase of 500 McAfee Inc. security software licenses on behalf of the district's government. But, it said, the outsourcer charged the IT department for 2,000 licenses, at an additional cost of $67,321.

The arrests and raid took place while Kundra was speaking at the FOSE 2009 conference in Washington. If Kundra was aware of what was going on, it wasn't evident in his speech, which focused on his vision for the federal government's use of IT.

For instance, Kundra promised to undo the government's image as a laggard on technology adoption. "We can be thought leaders when it comes to innovation," he said.

But with the later disclosure that Kundra would go on leave, the question now is when, and maybe whether, he will have a chance to deliver on that vision.

*— Patrick Thibodeau*

HARDWARE

## Cisco Set to Unveil First Blade Server

**Cisco Systems Inc. today is set to unveil its first blade server as part of the company's "unified computing" initiative.**

**Analysts said the new Intel-based blade server, code-named California, is designed to manage and automate the movement of virtual machines and applications across data center servers.**

**The blade servers are a key piece of the unified computing initiative, which aims to make it easier for companies to virtualize systems, said Cisco Chief Technology Officer Padmasree Warrior in a blog post.**

**Today's announcement, to be hosted by CEO John Chambers, is the latest part of a virtualization strategy Cisco unveiled five years ago.**

**Analysts said the company will also announce a switch and management console jointly developed with BMC Software Inc. and EMC Corp.**

**– MATT HAMBLEN**

**Cisco will be taking on longtime server partners IBM and Hewlett-Packard in the blade server business.**

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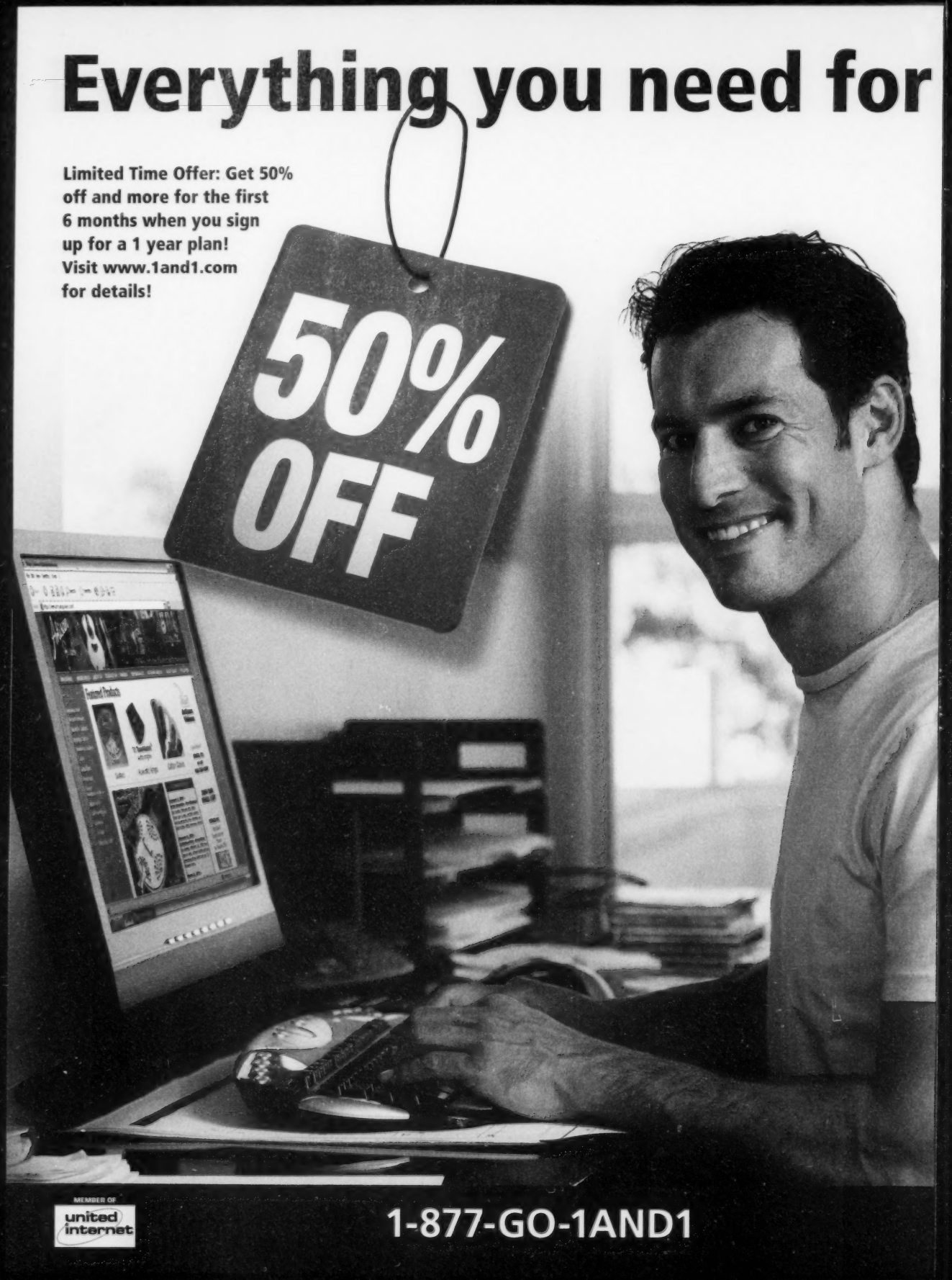
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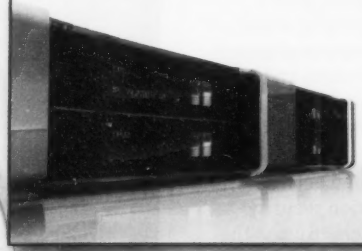

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SECURITY

# Companies Get Checklist On PCI Security Rules

THE ORGANIZATION that administers the credit card industry's data security rules has released a new set of compliance guidelines — a move that reinforces the widespread perception that efforts to comply are going slowly at many companies.

PCI Security Standards Council LLC, which was set up by Visa, MasterCard, American Express and other credit card companies in 2006, this month issued a 15-page document that details a "prioritized approach" for complying with the rules.

The new framework maps the 12 security controls mandated by the Payment Card Industry Data Security Standard (PCI DSS) to a list of six milestones. Bob Russo, the council's general manager, said the goal is to help companies that have yet to start on their PCI DSS compliance efforts and are wondering where to begin.

**PCI TO-DO LIST**

1. Delete data on credit card authentications.
2. Safeguard networks and their perimeters.
3. Secure payment-card applications and servers.
4. Monitor networks and control access to systems.
5. Protect data about card accounts and holders.
6. Ensure that all required controls are in place.

The first version of the security standard, which applies to all entities that accept credit and debit card payments, went into effect nearly four years ago. But many businesses still aren't fully compliant, said Jim Huguelet, a PCI consultant in Bolingbrook, Ill.

"I think there are a lot of merchants who feel overwhelmed at the amount of remediation [work] they need to undertake," Huguelet said. That, he added, has led to a state of "paralysis" in which companies either are doing nothing or are only implementing the easier PCI requirements, which by themselves do little to reduce the overall threat of data breaches.

The milestone-based framework finally gives those companies a template for moving forward, Huguelet said. "The journey of a thousand miles begins with a single step," he noted. "And the PCI [council] has now officially announced what those first steps should be."

Russo said the milestones are meant to provide an organized compliance methodology that ensures that the highest-risk issues are addressed first. In addition, a spreadsheet-based tool released with the framework can be used to plot progress against the milestones and to give auditors a snapshot of a company's compliance status.

The first milestone focuses on purging sensitive card-authentication data from systems and limiting the amount of information that companies collect and retain. Others revolve around network and application security, user access control and the protection of stored data.

*— Jaikumar Vijayan*

## Short Takes

Dell Inc. said it has laid off an undisclosed number of employees at sites around the world in a continuing effort to cut costs and streamline operations. The company in January had announced plans to cut 1,900 jobs in Europe.

Microsoft Corp. last week issued three security updates to patch eight vulnerabilities in Windows, including a critical bug that could let an attacker gain control of a machine simply by tricking users into viewing a malicious image.

AOL LLC has named Tim Armstrong, president of Google Inc.'s Americas operations, to replace Randy Falco as chairman and CEO. Falco and COO Ron Grant will leave AOL after an unspecified transition period, according to the Internet unit of Time Warner Inc.

Facebook Inc. said that several hard drives failed during a routine upgrade, causing the temporary loss of 10% to 15% of the photographs stored on its social networking site.

IT ECONOMY

# HP, Microsoft Offer Deals To Help Stretch IT Dollars

**LOOKING TO MAKE** its outsourcing and IT services more affordable in a down economy, Hewlett-Packard Co. last week said it is adopting variable pricing that will be based on the service levels users choose.

For instance, customers of HP's EDS unit will be able to specify different support service levels for individual applications based on their importance – with HP's pricing varying accordingly.

The new approach could lower application support costs by up to 40% for some users, said Jeff Womack, vice president of product marketing at EDS.

John Madden, an analyst at consulting firm Ovum, said HP is clearly being driven by the recession. "If you have customers that are hurting financially," Madden said, "do you pound them over and over with the same terms?" But, he added, HP also may be looking at the competitive challenges that vendors like EDS face from cloud computing services.

Microsoft Corp. is also offering some price breaks, through deals that let users save up to 26% on software licenses and

the company's Software Assurance support contracts.

"One reseller I talked to says he has never seen Microsoft doing this level of promotion and price-cutting in the enterprise space," said Paul DeGroot, an analyst at Directions on Microsoft.

– PATRICK THIBODEAU AND ERIC LAI

PRIVACY

# Bill Would Clarify Rules on Data Breach Disclosures

A CO-AUTHOR OF the landmark six-year-old California data-breach notification law said that a new bill he filed late last year would standardize the process of notifying consumers and government agencies of data breaches that expose personal information.

State Sen. Joe Simitian hopes SB 20 will clarify breach notification procedures.

Speaking at a symposium on breach notification issues held earlier this month at the University of California, Berkeley, State Sen. Joe Simitian said that his latest bill, known as SB 20, would give "greater clarity and specificity as to the content of security breach notices, which I think is long past due."

Simitian said he hopes that California Gov. Arnold Schwarzenegger will sign the new bill into law by year's end.

While letters sent by some companies and government agencies do a good job of telling affected users exactly what happened to their data, a "substantial number" do not, often leaving consumers "more confused than informed," he said.

SB 20 also requires that the state attorney general's office or another agency keep track of breaches, which Simitian said would give public officials "a better understanding of the nature and scope of the problem."

Fred Cate, a law professor at Indiana University's Maurer School of Law in Bloomington, told symposium attendees that government agencies may underestimate breaches because they lack information. "We actually have very poor data on data breaches," Cate said, noting that current laws mostly require consumers, not governments, to be notified that personal data was accessed.

The initial California law, which took effect in 2003, requires that consumers be notified when unencrypted financial data is lost or stolen from computer systems. The law is credited with inspiring similar legislation in 43 other states.

*— Robert McMillan, IDG News Service*

BETWEEN THE LINES *By John Klossner*

## BENCHMARKS LAST WEEK

The Association for Computing Machinery said that it will give its 2008 A.M. Turing Award to MIT professor Barbara Liskov for her work on software programming methodologies.

Satyam Computer Services Ltd., which admitted to fraudulent accounting in January, began a bidding process aimed at finding a new majority owner.

**SIX YEARS AGO:** In an effort to reduce medication errors, the U.S. Food and Drug Administration mandated that bar codes be put on the packages of all drugs used in hospitals.

## Global Dispatches

### U.K. Police Lose Crime-Data Card

**EDINBURGH, Scotland** – A memory stick containing unencrypted information on hundreds of Lothian and Borders Police investigations has gone missing.

The USB memory stick was last used by the traffic unit in the police department, which is responsible for the city of Edinburgh and the rest of southeastern Scotland. The police disclosed the incident on Feb. 26, nearly two months after the stick was lost.

A department spokesman said the data wasn't encrypted because the memory stick was "being transferred within a secure compound within police headquarters."

"We are confident that this loss does not in any way compromise any individual involved in any ongoing or previous police investigations," he added.

Leo King,
*Computerworld U.K.*

### Perot Opening BPO Office in Chennai

**CHENNAI, India** – Perot Systems Corp. last week announced plans to open a new facility here that will specialize in business process outsourcing for the health care industry.

A Perot India spokesman said the company plans to increase its overall IT and BPO workforce in India by about 1,000, to a total of 7,700 employees, during 2009.

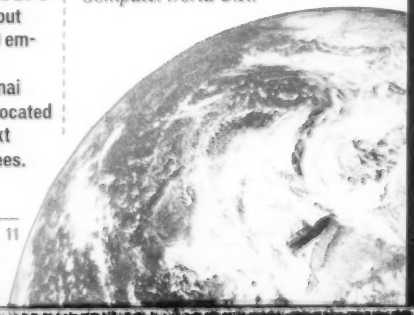
He said the new Chennai BPO facility – its fourth located in the city – will open next month with 353 employees. The company said it expects the facility to house 800 workers by year's end.

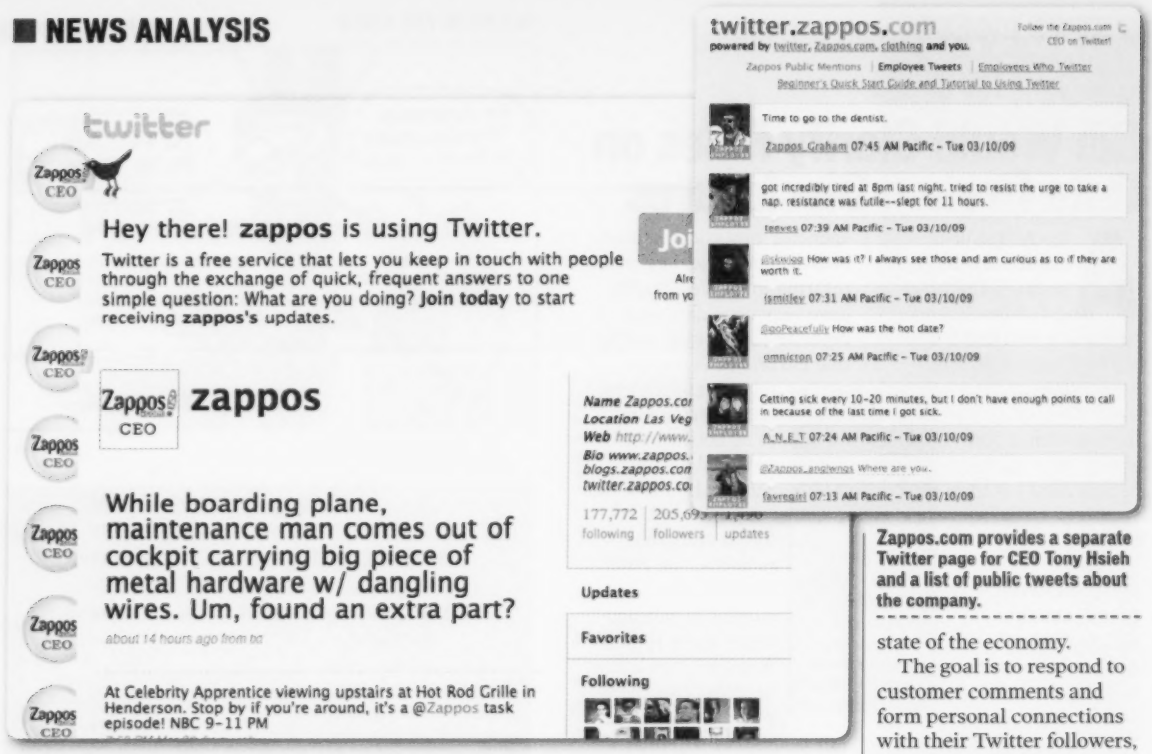
John Ribeiro,
*IDG News Service*

**BRIEFLY NOTED**

Iceland Foods Ltd. in Deeside, Wales, has signed an £11.5 million ($15.8 million U.S.) contract to renew its outsourcing deal with Netherlands-based Getronics NV for seven years. The deal calls for Getronics to host the Iceland Foods servers and oversee IT security, systems management, service desk provisioning, and PC and BlackBerry support functions.

Leo King,
*Computerworld U.K.*

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Zappos Public Mentions | Employee Tweets | Employees Who Twitter
Beginner's Quick Start Guide and Tutorial to Using Twitter
Time to go to the dentist.
Zappos_Graham 07:45 AM Pacific - Tue 03/10/09
got incredibly tired at 8pm last night. tried to resist the urge to take a nap. resistance was futile--slept for 11 hours.
teeves 07:39 AM Pacific - Tue 03/10/09
ismitley 07:31 AM Pacific - Tue 03/10/09
omnicron 07:25 AM Pacific - Tue 03/10/09
Getting sick every 10-20 minutes, but I don't have enough points to call in because of the last time I got sick.
A_N_E_T 07:24 AM Pacific - Tue 03/10/09
favregirl 07:13 AM Pacific - Tue 03/10/09
twitter
Hey there! zappos is using Twitter.
Twitter is a free service that lets you keep in touch with people through the exchange of quick, frequent answers to one simple question: What are you doing? Join today to start receiving zappos's updates.
zappos
CEO
While boarding plane, maintenance man comes out of cockpit carrying big piece of metal hardware w/ dangling wires. Um, found an extra part?
about 14 hours ago from txt
At Celebrity Apprentice viewing upstairs at Hot Rod Grille in Henderson. Stop by if you're around, it's a @Zappos task episode! NBC 9-11 PM
Updates
Favorites
Following

**Zappos.com provides a separate Twitter page for CEO Tony Hsieh and a list of public tweets about the company.**

# Web 2.0 Tools Can Foster Growth In Hard Times

## But analysts warn that companies should be prepared for potential online user attacks. By Sharon Gaudin

ZAPPOS.COM INC. credits its novel Web 2.0-based sales philosophy for much of its significant sales growth — and continuing profitability — during the current hard times.

The online shoe and clothing store doesn't spend massive sums creating and implementing online or offline marketing and advertising campaigns, yet it still generates significant buzz among its current and potential customers.

How? Mostly through its heavy use of Twitter Inc.'s eponymous social network and, to a lesser extent, its use of tools from Web 2.0 providers like Facebook Inc.

Of Zappos.com's 1,400 employees, 450 actively use Twitter to promote the company. In fact, CEO Tony Hsieh is the 20th most popular Twitterer, with more than 186,000 followers on the social network, according to Twitterholic.com.

Instead of sending online shoppers coupons or information about sales, executives and employees at Henderson, Nev.-based Zappos.com regularly tweet about what happens to them at the airport, the fact that they eat marshmallows in between phone calls and the state of the economy.

The goal is to respond to customer comments and form personal connections with their Twitter followers, as well as with friends on Facebook, where employees post blogs and videos.

The tweets and posts are a way to give customers and other curious social network members a way to get a glimpse at the inside workings of the company.

"Today, consumers have access to so much information," said Aaron Magness, director of business development at Zappos.com. "You can buy the same shirts at Zappos as at somewhere else. The product almost becomes less important; it becomes about the business."

The privately held retailer claimed more than $1 billion in sales last year, up from $840 million in 2007. In blog posts, Hsieh said the company did cut 8% of its workforce late last year because of the declining economy, but it continues to be profitable nonetheless.

Zappos.com isn't alone in its use of social networks. Companies large and small

*Continued on page 14*

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*Continued from page 12*

are increasingly investigating how to best use Web 2.0 tools from the likes of Twitter, Facebook, LinkedIn and YouTube. Analysts note that there's increasing pressure from customers and employees on companies to use social networks.

## POTENTIAL RISKS

Analysts say that, as in the case of Zappos.com, using Web 2.0 tools to boost visibility can be a good thing, but the strategy can also pose risks, especially in a time of layoffs, benefit cutbacks and salary reductions.

For example, an employee, whether she's a CEO or a researcher, could create an online maelstrom with an unintentional slip of the keyboard. And readers of a company's online posts, bolstered by anonymity, could respond to them in a particularly vicious manner.

"It's two-way communication, and you have to be able to take the heat that may come your way," said Dan Olds, an analyst at Gabriel Consulting Group Inc. in Beaverton, Ore. "It isn't for everyone. Some companies will have a hard time dealing with it, while others will thrive."

Olds said that any company using Web 2.0 tools will inevitably face strong, and potentially embarrassing, criticism. "No company is perfect, and some customers will complain about anything," he said. "That's why some companies are still cautious about engaging with social networks."

Olds also noted that it's important for businesses to find the right voice or tone for their social networking personas. For example, Dell Inc. uses sites like Twitter to blast out information about sales and coupons, while Zappos.com is all about letting customers get to know its employees, he said.

"You have to make sure that you're presenting the right image for your company and doing it in the right way," he said. "A whimsical and funny approach will work for Apple and many other companies, but not so well for, say, Dow Chemical. It takes a lot of thought and careful consideration."

Olds also suggested that companies establish a clear goal for their social networking strategies — and he said they shouldn't expect users to automatically embrace them. "A bank that focuses on its interest-bearing checking accounts will be less interesting than a bank CEO who provides straight talk on the economy. The critical thing is to understand your goals and present an image consistent with your company," he said.

"I see this whole social networking phenomenon not as truly a purely technical phenomenon, but as a change in the values of the organization," said Soumitra Dutta, the Roland Berger Chaired Professor of Business and Technology at INSEAD, an international business school in Fontainebleau, France.

"CEOs are becoming more open to new ideas from employees and customers they haven't normally interacted with," Dutta said. "Traditionally, companies have looked at customer relationship management as a one-to-one issue. Today, we're seeing that customers talk to each other and not just directly to the company."

Thus, businesses must move in to try to actively manage their relationships with these communities and respond to positive and negative feedback, he added.

A growing number of businesses are creating such communities to bring together groups of people who all love the same thing, whether it's a certain pair of sneakers, a car model or a mainframe computer.

**Today, consumers have access to so much different information. You can buy the same shirts at Zappos as at somewhere else. The product almost becomes less important; it becomes about the business.**

DIRECTOR OF BUSINESS DEVELOPMENT, ZAPPOS.COM INC.

For example, just over a year ago, IBM created a Facebook page for people interested in news and information about its System z mainframe computer offerings. Launched in December 2007, the page now counts more than 700 friends. And, IBM notes, that's a lot of friends for a computer that isn't the newest or sexiest around today.

IBM spokesman Kevin Acocella acknowledged that the company's use of what many see as kids' technology to gather people interested in big-iron machines used by the Facebook generation's fathers and grandfathers is somewhat ironic.

IBM is looking to use the technology to get young people interested in mainframe technology by offering links to articles, comment strings, YouTube videos and the like. The Facebook page has become particularly important in this economy, since many IT professionals and students can't afford to go to conferences or seminars, Acocella added.

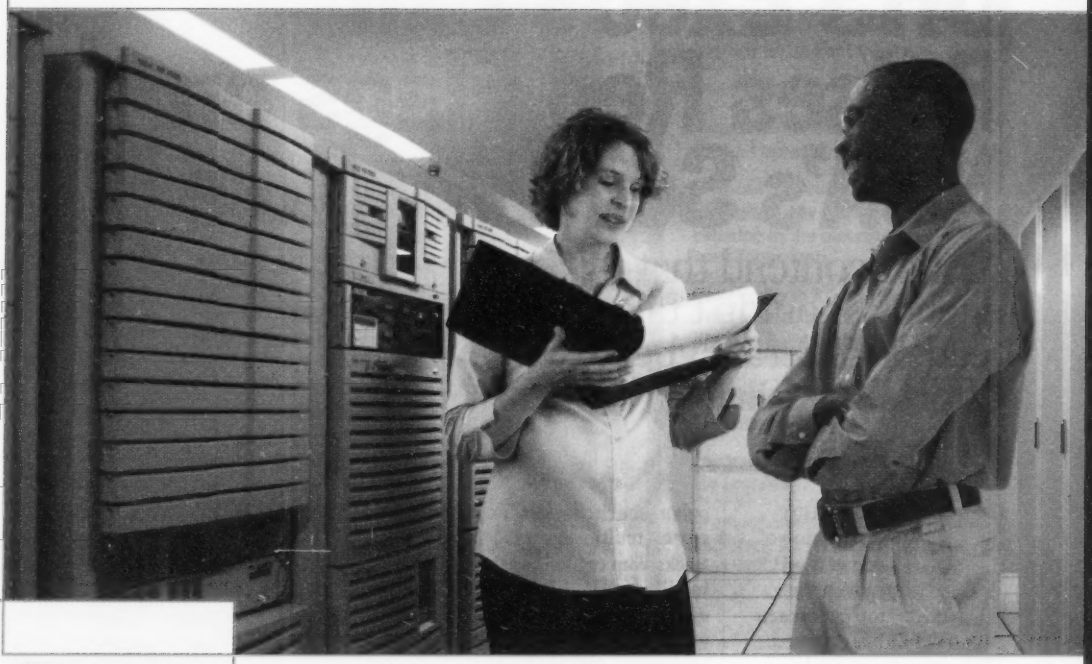
Despite its status as one of the earliest computer companies, IBM is no Johnny-come-lately to the social networking scene. IBMers have been blogging and collaborating with wikis for several years.

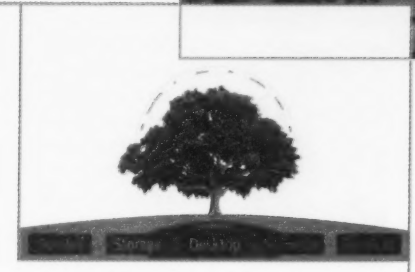
The company has even created a social networking site, dubbed The Greater IBM Connection, for IBM employees and alumni. The site, which was created about two years ago, attracted some 24,000 members in the first 14 months. Membership has since tripled to 73,000 in more than 110 countries, Acocella said.

Also, IBM has created a social media team to help its current employees learn how to use social networks, record and edit podcasts, and be successful bloggers.

"Over the years, we've learned that what the decision-makers cite as one of the most, if not the most, important driver of their perception of IBM is their personal interaction with IBMers," noted Acocella.

And while IBM requires its employees to follow Web 2.0 guidelines it has established — such as banning the use of obscenities or slurs, or the posting of confidential company data or personal information about fellow employees — others, like Zappos.com, give their employees free rein. ■





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# DHS Exec's Exit Raises Red Flags on NSA's Security Role

## Critics contend that the spy agency shouldn't take the lead on federal cybersecurity efforts. By Jaikumar Vijayan

THE ABRUPT resignation of one of the U.S. government's top cybersecurity officials has exposed widespread — though not universal — opposition to the National Security Agency's expanding role in federal security initiatives.

Rod Beckström stepped down as head of the National Cybersecurity Center on Friday, six days after his one-year anniversary in that job. The Department of Homeland Security made him the NCSC's first director after setting up the agency to oversee the government's cybersecurity defenses and cyberthreat responses. But in a sharply worded resignation letter dated March 5, Beckström said the NSA is effectively running those efforts.

He also claimed that by proposing that the offices of both the NCSC and the National Protection and Programs Directorate be moved to its headquarters, the NSA is trying to wrest further control from the DHS.

Letting the intelligence agency take the lead on cybersecurity is "a bad strategy on multiple grounds," Beckström contended. The intelligence culture is "very different than a network operations or security culture," he wrote, adding that the NSA should be involved in cybersecurity programs but not have control over them.

Similar sentiments were voiced at a congressional hearing on cybersecurity issues last week. For instance, Scott Charney, vice president of Microsoft Corp.'s Trustworthy Computing initiative, noted that the NSA has more technical expertise on cybersecurity than other agencies do. But to ensure that the security work is "being done in a transparent fashion, the mission cannot rest with the NSA," Charney said.

Historically, intercepting and analyzing foreign communications has been the NSA's primary responsibility. As a result, it focuses more on covert data collection than on the information-sharing needed to build effective security defenses across the government and in the private sector, other critics said in interviews.

The NSA's "strength lies in breaking into networks," said Gartner Inc. analyst John Pescatore. And while the agency's top-secret nature is obviously appropriate for spying, it's the "exact opposite" of what is required on cybersecurity initiatives outside of the military, he said.

The NSA does have an information assurance unit that coexists with its eavesdropping operations and provides a wide range of security technologies and services, including vulnerability analysis and a 24/7 threat warning capability.

Giving the NSA control would be "a bad strategy," says Beckström.

But those dual roles may conflict with each other, claimed Bruce Schneier, chief technology officer at security services vendor BT Counterpane. Citing a hypothetical example, Schneier wondered what the NSA would do if it found a flaw in Windows that would let the agency monitor electronic communications. "Do they fix it or do they exploit it?" he asked.

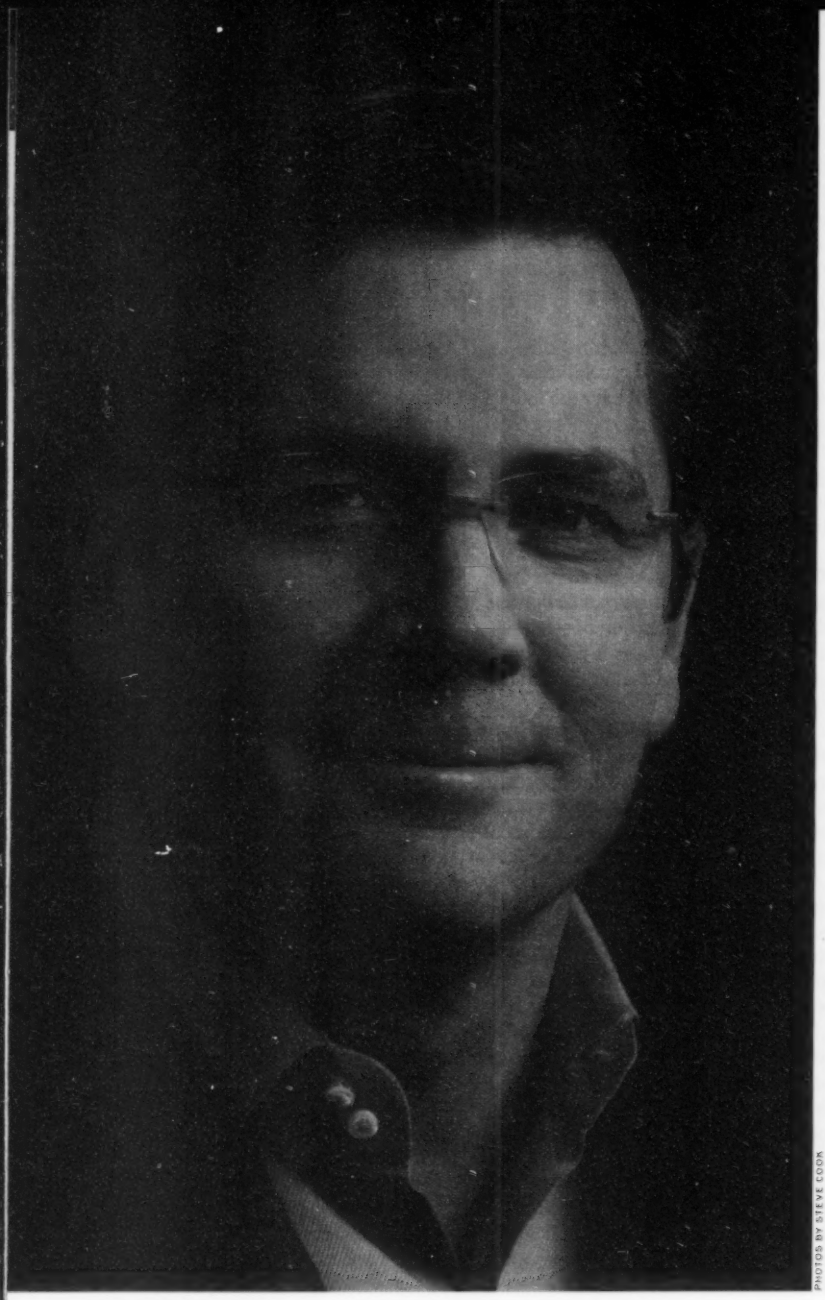
In testimony last month before the House Permanent Select Committee on Intelligence, Dennis Blair, who became director of national intelligence in January, acknowledged that many Americans don't trust the NSA to protect data. But he said that it has "the greatest repository of cyber talent" in the government and that its capabilities should be "harnessed and built on."

The NSA also has its supporters outside of the government. For instance, Alan Paller, director of research at the SANS Institute, a security research and training organization that has worked jointly with the NSA, said the leadership shown by the agency and the Department of Defense has been "the only bright spot in a desolate federal cybersecurity landscape."

And it's not like the DHS has a lot of fans — the agency was roundly slammed at last week's hearing. David Powner, director of IT management issues at the Government Accountability Office, said it's obvious that the DHS isn't living up to its leadership responsibilities on cybersecurity.

In a statement, the DHS voiced regret about Beckström's departure and defended its ongoing security efforts. The agency said that it "has a strong relationship with the NSA and continues to work in close collaboration with all of our federal partners on protecting federal civilian networks."

All eyes are now on a 60-day review of federal cybersecurity programs that President Barack Obama ordered last month. The president is seeking recommendations for ensuring that the programs are aligned with government and private-sector needs. Then he gets to decide how big of a role both the DHS and the NSA will play in the future. ■



PHOTOS BY STEVE COOK

■ THE GRILL

# Rob Carter

**FedEx's CIO** talks about **recession cleanups,** a challenging **customer base,** and the promise of active **RFID and sensor** technologies.

## Dossier

**Name:** Robert B. Carter

**Title:** Executive vice president, information services, and CIO

**Organization:** FedEx Corp.

**Location:** Memphis

**Favorite technology:** "My BlackBerry. I admit it: I'm addicted."

**Favorite nonwork pastime:** "Getting away from the city and relaxing in the mountains of east Tennessee."

**Philosophy in a nutshell:** "Work hard, lead a balanced life, and have an undying respect for people."

**Recent good read:** *Outliers*, by Malcolm Gladwell

**Favorite movie:** *Raiders of the Lost Ark*

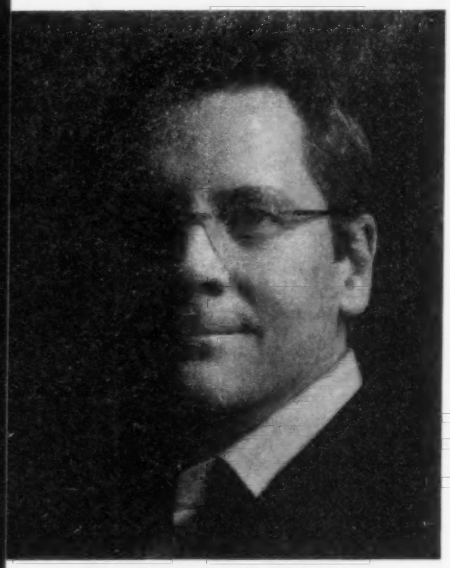
**Greatest ambition:** "For the first half of my life, it was about success. Now that I'm in the second half, it's about significance."

**How have you had to reprioritize IT projects because of budget considerations in this economy?** While it's certainly tighter than average this year, that by no means implies that we're not investing. We've got a reasonable project plan for the year that does reflect the restrained spending, but at the same time, you have to make investments.

In hard times, it takes the most courage to invest and stay current. We also get the ability to clean up some things, frankly. When there's a lot of pullback in investing, sometimes it's a good time to go in and target areas that you've needed to get to but haven't.

**What are you cleaning up now?** We're making a lot of infrastructure investments. The data center and network infrastructure build-out is where a lot of our focus is right now.

**What new projects made the cut for the next 12 months?** The focus tends to be around international, ease of use and customs clearance. We're making a lot of investments in the customer service [and interactive voice response] platforms around the world [and] in our mobile infrastructure. With FedEx Mobile,



**"The challenge we face isn't one technology being bad versus others being good, it's about the composite complexity that's been created with generation after generation of technology.**

we've seen more than 500% growth year over year. We continue to invest in that.

**What technologies did you deploy to develop that?** We use Adobe Flex and AIR on the front end. We can run AIR applications, which are browserless applications that pull information from the Internet. Flex allowed us to rapidly build graphical interfaces that are animated. You get very clear depictions of what's going on.

On the back end, we have the same high-performance back end that we've had for some time. During a typical morning of package delivery and package movement, we're probably posting about 3,000 transactions per second. At the same time, we're handling 1,000 inquiries per second against that same database.

**What are your biggest technology limitations or issues?** The one that vexes us the most are the least common denominator technologies that our customers have. Some customers run on very old desktop machines with a dial-up connection. A big part of the challenge for us is making sure we offer low-bandwidth capabilities that match the needs of a customer's site and at the same time provide a rich, high-performance experience for people with new technologies, new handheld devices and broadband capabilities. It's running that gamut that's the most challenging limiter. We don't just get to move along the current edge of technology; we have to make sure we move along the tailing edge as well, or we will alienate a lot of customers.

**What emerging technologies do you find most promising for your organization and why?** The next generation of sensors and active RFID devices is going to really revolutionize the Internet and what is possible.

The connected Web has changed the way the world works and has been incredibly powerful. We're getting ready to shift to a new world where sensors are capable of being online and part of that connected space.

We're working hard on things like embedding sensors in critical shipments that give us visibility to temperature, vibration and all those kinds of things. We're piloting that with some of our high-value customers today.

That's just one example of how high-performance, actively communicating sensors will work their way onto the Web and provide dynamic status and location information that will automate transactions in all kinds of businesses.

**How will sensor technology change your business?** Passive RFID tags and bar codes require some sort of interrogation, whether it's a scanner for a bar code or a reader for RFID. When that event isn't occurring, you don't have dynamic, active information about that shipment. With a smart package, you can set all kinds of alerts. Let's say you're shipping packages for biotech that have temperature requirements, and the sensor is alert at all times. If a threshold has been crossed, either too hot or too cold, it can send an alert without being anywhere near a scanner.

You can have a very high-value shipment that's moving inconspicuously through the network with a light sensor in it. Once that package arrives at its destination, it's fine if light [hits the sensor]. But if light [had hit the sensor] prior to that event, it means that the package had been opened. That's worth sending an alert about for high-value shipments.

As these sensors go mainstream, you can think of all kinds of applications. If you want to know the location of a high-value shipment, the ability of GPS to tell you exactly where it is, at a given point in time, is revolutionary. We have a very controlled system that will tell you at all times where something is when it's in our control, but the ability to locate things on the spur of the moment is a powerful tool.

**If you could rip out any legacy IT infrastructure technology and replace it with the state of the art, what would you scrap?** There aren't inherently bad technologies, even when you look out in the legacy world. If there were a wand I could wave, I would try to eliminate complexity. The challenge we face isn't one technology being bad versus others being good, it's about the composite complexity that's been created with generation after generation of technology.

**In addition to your day job at FedEx, you're also on several boards of directors. Why?** Our chairman encourages participation on relevant boards that help us as a management team come together with insight into key markets.

The retail sector is a very large cohort of the FedEx customer base. In the years I've been a part of the [Saks Fifth Avenue] board, I've learned a tremendous amount of how retail works and what's important. It makes the things we do to specifically support customers involved in that class of commerce very relevant.

If there is one thing IT professionals need to do to become more valuable, it's to round out their perspectives and be able to provide valuable business insight. One of the great ways to do that is to be involved on boards.

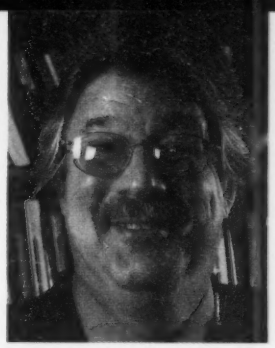
Boards are more and more looking for [IT] expertise. All companies struggle with the best ways to deploy technologies and strive to have board members who are fairly steeped in that world.

— *Interview by* **Robert L. Mitchell**

■ OPINION

Winn Schwartau

# What It Will Take To Wire the World



CURRENTLY, 15% of the human race is wired. It's a smallish number, really. But when you consider what we in the IT industry expect of those who join the wired elite, it's something of a miracle that the percentage is as high as it is.

How, then, can we expect the remaining 85% of humanity to join the hundreds of millions already online? It won't happen until we rethink the way technology is designed and delivered, concentrating on three areas I refer to as scalable functionality, native security and graceful degradation. They're interrelated, but it's best to consider each in turn.

The first rethink requires a return to simplicity. Technical complexity causes user error, poor security and systemic failure. Increasingly complex products, with features and functions compounding themselves with each new revision, require greater levels of user sophistication, learning ability and technical facility while courting failure and misuse. If we hope to integrate the planet, we must adapt to the needs of a radically different, less technically savvy consumer who has not had the past three decades to become accustomed to the ever-expanding complexity of the tools and applications we use in business, education and entertainment.

Instead of making only computers, phones and applications that try to do everything under the sun, we should provide the option of tools and core operating systems that are substantially less bloated. A lot of CIOs (and security officers, too) have told me that they would love to see upgradable versions of basic office applications. Most users would probably need only a "lite" version of Word or Photoshop. Some users would need more, and a few would need a lot more. Upgrades for them would be possible, but only after a risk analysis.

**■ Web use won't expand until we rethink how technology is designed and delivered.**

Such scalable functionality already exists in a few applications. Mozilla, for example, offers a basic Firefox browser that users can upgrade with plug-ins and add-ons. What users need to understand is that the stability and security of the basic browser are increasingly compromised with each add-on.

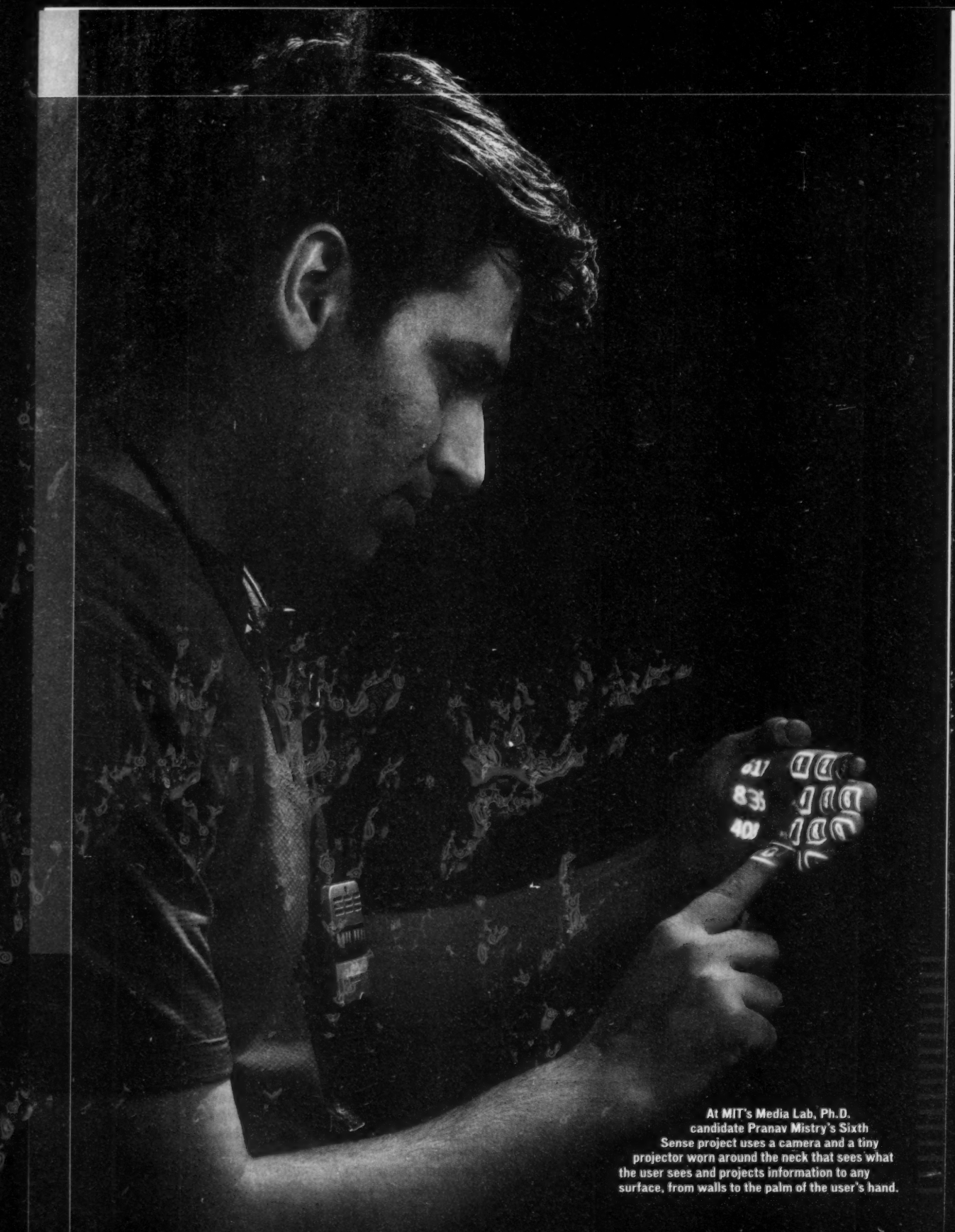
That brings us to the second rethink the industry needs to undertake: the wisdom of building security into both hardware and software products from the day of their conception. In a world where botnet armies consisting of as many as 5 million zombie machines are said to exist, users have to know how to protect their computers from sophisticated attacks.

The tech industry has largely ignored its fastest-growing customer base by making things more complicated and not building any security into its products. More than 30 years after the introduction of the PC, we have not insisted that vendors build resilient, self-protecting devices. And that lack of native security is going to scare off a large chunk of that 85% of the world that remains unwired.

The third rethink would result in graceful degradation. Systems will fail — it's an unavoidable fact of life. Most systems, though, are designed with no thought given to that inevitability. We need software and hardware with semi-intelligent self-awareness that recognizes anomalous behavior and reacts. Systems could be allowed to fail in part rather than experiencing total collapse. The industry's approach to fault tolerance now emphasizes complete redundancy and remote mirrored data centers — an extremely costly, all-or-nothing approach. Hardware, firmware and software should be far beyond a pure binary approach.

These three concepts represent a basic rethinking of how we design technology and what we expect of it. But without some new thinking, the world will never achieve true integration. ■

**Winn Schwartau** *is founder of SCIPP International, a global nonprofit organization dedicated to providing security awareness training and certification services for end users and consumers, along with certification programs for organizations.*



At MIT's Media Lab, Ph.D. candidate Pranav Mistry's Sixth Sense project uses a camera and a tiny projector worn around the neck that sees what the user sees and projects information to any surface, from walls to the palm of the user's hand.

# PC 2019

What's in store for everybody's go-to computer? Read on.

**By Mary K. Pratt**

FOR THOSE of you who want the world at your fingertips, the wait is almost over.

The future PC promises to put nearly everything you could need or want right in your palm.

Think of a souped-up version of today's smartphone, with a monitor that unrolls into a larger screen and a biometric security system that lets you access everything in your professional and personal life from anywhere, with all the data residing in the cloud. Wave it at your car to unlock the door. Order and pay for your morning coffee with a touch of a button. Plug it into a docking station and project that big presentation to your clients. Book a weekend getaway with just a few clicks.

"PCs are going from engines or tools to portals and enablers. The vision of what they'll be in the future is a partner. They'll be participating in the higher cognitive tasks of what people do to get their jobs done," says Andrew Chien, director of research at Intel Corp.

The personal computer has been a corporate workhorse for decades. And while it has evolved, becoming slimmer and more mobile, in many ways it still resembles those gray boxes tethered to the mainframe. But the next decade will bring dramatic changes, as the PC evolves past the standard desktop and laptop units to amalgamations of computing devices and their peripherals. This future PC will be smarter, too. It could discreetly remind you of the name of an acquaintance and alert you when it's time to take your medicine. It will be your colleague, your butler — and possibly your friend.

We talked and corresponded with a dozen or so experts in R&D, IT management and academia to get a feel for what they're expecting the PC to look like a decade from now.

## A NEW LOOK

One thing everyone seems to agree on: The PC of 2019 won't look like today's laptops. "I'm not seeing people carrying anything that looks like a book," says Dan Siewiorek, a professor of computer science and electrical and computer engineering at Carnegie Mellon University and director of the university's Human-Computer Interaction Institute. "It would be like a phone or a ring or watch. It will probably take multiple form factors."

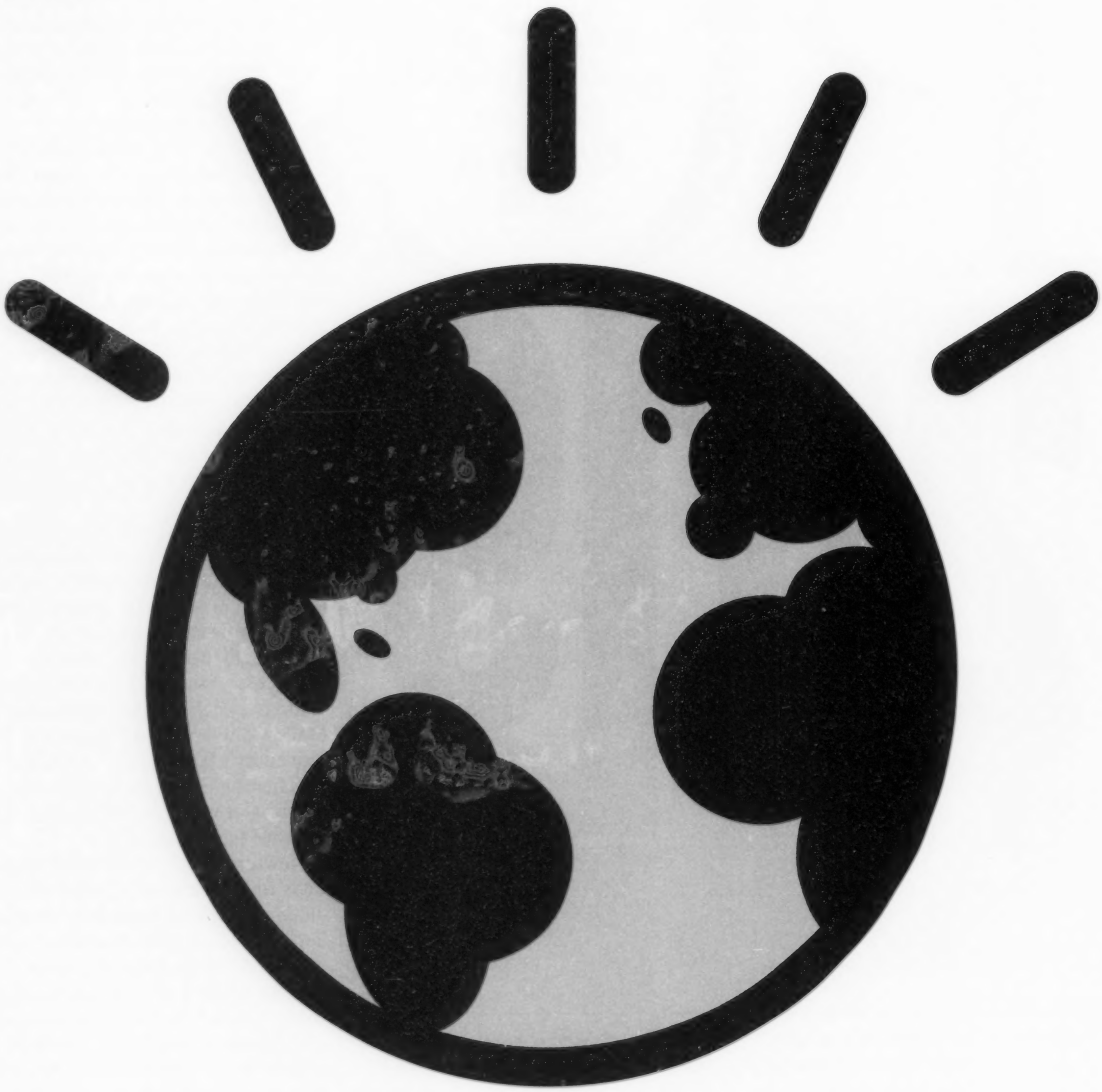
Siewiorek says function will increasingly influence what PCs look like. An older person who needs help with independent living, for example, might carry a PC in the form of a wristwatch and use it as a virtual coach that reminds him about appointments or medicine schedules. A technical worker might have her PC in her eyeglasses, allowing her to access and view information through embedded monitors and share what she's seeing with colleagues and supervisors via a camera in the glasses. Siewiorek says he can even imagine how PC technology could revolutionize the way, say, offshore crane operators or airplane mechanics do their jobs.

*Continued on page 24*

PHOTOGRAPHS BY SAM OGDEN

IBM

THINK



Conversations for a Smarter Planet

# A mandate for change is a mandate for smart.

The world is ready for change – that much is clear.

For leaders of all kinds, this moment presents a rare opportunity. Our planet is not just getting smaller and flatter. It is also becoming smarter.

That is, intelligence is being infused into the way the world literally works – into the systems, processes and infrastructure that enable physical goods to be developed, manufactured, bought and sold. That allow services to be delivered. That facilitate the movement of everything from money and oil to water and electrons. And that help billions of people work and live. This means we actually have the potential to change the way the world works.

That's good news, because the systems by which the world works today are increasingly unsustainable. They may be networked, but it turns out that being connected isn't enough.

It isn't enough to prevent us from wasting too much energy. From spending too much time in traffic. From producing food too expensively and wasting too much of what we produce. From missing too many sales opportunities and disappointing too many customers because of inefficient supply chains. From making too many medical errors and spending too much to provide healthcare for too few. And most obviously of late, from failing to manage financial risk.

Now, with computational power being built into things we wouldn't recognize as computers, any person, object, process or service and any organization, large or small, can become digitally aware, connected and smart. Consider the changes already under way.

Smart traffic systems are helping to reduce gridlock by 20%, cutting pollution and increasing ridership on public transit.

Smart food systems based on RFID technology embedded into supply chains are monitoring the flow of meat, poultry and other items – from the farm to the supermarket shelf.

Smart healthcare systems are helping to lower the cost of therapy by as much as 90%.

Police departments are correlating street-level information from myriad observations and devices to identify crime patterns – helping prevent crime rather than simply punishing it.

The list is long and the transformation is just beginning. Its benefits will be reaped not only by large enterprises, but also by mid-sized and small companies – the engines of economic growth everywhere – and by individuals and communities around the world.

Imagine how a smarter planet will transform the ways we pursue everything from economic growth to societal progress to environmental sustainability to cures for disease, as well as the ways we interact with each other and with the world.

The opportunity is before us, and the moment will not last forever. The question is, will we seize it? As we look to stimulate our economy and rebuild our infrastructure, will we simply repair what's broken? Or will we prepare for a smarter future?

Let's build a smarter planet. Join us and see what others are thinking at **ibm.com**/change

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# TOMORROW'S IT FOLLOWS TOMORROW'S PC

**THE FUTURE OF THE PC could drastically change what companies expect from IT departments, as the mobility and flexibility of computing will expand where and when employees work.**

**Wen Xiao, CIO of global service delivery at BT Group, is already thinking about what this means for IT leaders like him. "I am a big believer in user-owned computing," he says. "In other words, [the] user should be responsible for provisioning their own computing devices, and the corporate IT department's job is to create a secure enterprise cloud and control the access and authentication of individual users."**

**That will give employees more choices, Xiao says. They can pick whatever PCs they prefer and will be responsible for the maintenance of them. The specific computing device won't matter to the enterprise anymore.**

**"We'll be virtualizing everything, and if I virtualize everything, then investing in the device is the wrong decision. I'll have to focus on the architecture," Xiao says.**

**He's already working on building an enterprise that supports user-owned computing, where workers can use flashcards to access the company's applications and data.**

**With such changes on the horizon, Xiao says the IT department and even the role of the CIO will change. Instead of focusing on hardware, CIOs will look at how to best assemble services that reside in the cloud, how those services can be arranged to best fit the business needs and give the company a competitive advantage, and how they can be secured.**

**As Xiao says, "There's a whole new horizon for the PC of tomorrow and the CIO of tomorrow."**

**– MARY K. PRATT**

*Continued from page 21*

The changing ways in which we work and live — and the blurring line between the two — are driving the changes we will see in our computers.

"The PC of 2019 will be nothing like the PC we know today," says Wen Xiao, CIO of global service delivery at London-based telecommunications giant BT Group PLC. "It will be smaller and ubiquitous. Its function is less of computing and more of access control and communications. The computing capabilities will reside inside the cloud and be accessed on demand by [the] individual user."

He says younger workers, and certainly those who will enter the workforce in the coming decade, expect their data — not just their devices — to travel with them. They need their PCs to work wherever they want them to, and they don't want to worry about storing and transferring data.

Xiao says virtualization and cloud computing are already enabling that new level of mobility, and the trend is expected to accelerate. "The computing [and] data-storage functions will all be virtualized — device-independent, location-independent data and applications stored somewhere in the cloud, and on-demand software applications," Xiao says.

That, in turn, changes what we need from hardware. "Its main purpose is no longer computing but identification," he explains. "As a result, it will be super small or most likely combined with other devices, like mobile phone, key, bio-ID, etc. What's inside is a unique identification of the user."

Bill Schilit, a research engineer at Google Inc. and associate editor in chief of the IEEE Computer Society's *Computer Magazine*, says he, too, sees "the trend more and more off the desktop. We see people using just their cell phones or a very thin client on their desks or some sort of docking model, where you take your cell phone and plug it into a keyboard."

Moreover, the PCs of the future will put the accent on "personal," he says (emphasizing that this vision is his, not Google's). Consumer demand for games and instant access to everyday information — announcements of school closings, traffic updates, weather reports — will drive adoption, he says.

"We're going to see a lot more people using computer phones/smartphones and a lot more software for them," he says.

## SHAPE CHANGERS

The PCs of the future could be more flexible in every way — even physically. For starters, they'll have adjustable screens that users can stretch, roll or unfold to open. "So you can contort that device and make it bigger, maybe widen it to 6 inches tall and 10 inches wide so you can watch TV or access information through wireless broadband or peer-to-peer technology," says Sam Driver, an analyst at research firm ThinkBalm in Little Compton, R.I. "Then say you take that device to your office, you can stretch it and start working, and you can have it communicate in the office with printers and other devices."

But that's just the beginning. Researchers are working on programmable products that contain embedded microprocessors and storage in the material itself. The material would be programmed to change shape based on the user's needs, Chien explains. For example, you could morph your smartphone into a Bluetooth headset and then into a remote control by just touching a button on the device. Think of it as the ultimate Transformer toy.

"You can build computing systems that conform to different uses," Chien says, noting that the technology might not be market-ready by 2019, but it will be close.

The future PC will be different in other significant ways from today's desktop system.

There's a good chance your keyboard and monitor will be gone, replaced by projected versions instead. This approach is already being pioneered at the MIT Media Lab.

And that mouse? It will be rendered obsolete within the decade thanks to touch-screen technology, Xiao says.

Instead, he says, "output could be displayed on a variety of surfaces," including tabletops (as is the case with Microsoft Surface systems), TVs and

mobile phone screens as well as vertical multitouch screens (like Perceptive Pixel Inc.'s offering), e-paper or any blank surface for holograms to be projected on.

Xiao also says that users will no longer have to choose between only full-size monitors and the miniature versions found on handhelds. Moreover, the keyboard will be obsolete or replaced by a hologram.

Siewiorek says your PC will understand boundaries, too, and adjust displays accordingly. So if you're looking at confidential budgets projected on a wall when someone walks into your office, your PC will sense that person's presence and blank out the information.

Kiss wires and plugs good-bye, too. Wireless will rule, and your PC will possibly draw power in new ways, Driver says. You might use magnetic induction charging to transfer power from the building's power supply without the need for chargers, plugs and wires. Or, Chien says, your PC might scavenge energy from the environment, drawing power from light or heat or even the motion around it.

"You can untether computing devices from power cords because they may well get some of the energy they need from the ambient environment," he predicts. "So you can charge laptops or mobile phones without plugging them in."

Xiao says that future PCs will also have better, smarter ways to input information. "Advancement in Semantic Web and artificial intelligence will greatly reduce the need of data input," he says. "Touch screens, voice commands, even brain waves will become the dominant input methods."

No more typing in data or using a mouse to manipulate data, Xiao says. Instead, you'll wave your head to move files or direct your thoughts to input information. These advances, once the realm of science fiction, are close to becoming mainstream reality.

## LOOK AROUND

In fact, much of what's ahead is already here, at least in primitive form. "Anything you'd likely see in 10 years is available now," says Fred Killeen, chief technology officer at General Motors Corp., explaining that most technological innovations are available somewhere in some form years before they become mainstream.

Consider smartphones and wireless. Those are the precursors to what's on the horizon. Similarly, the advances taking place on the back end today — specifically, cloud computing and virtualization, along with ever-increasing levels of bandwidth — are laying the foundation for what's ahead. These technologies will continue to take data and storage off individual devices, allowing users with the right credentials to access the information from anywhere at any time with any device.

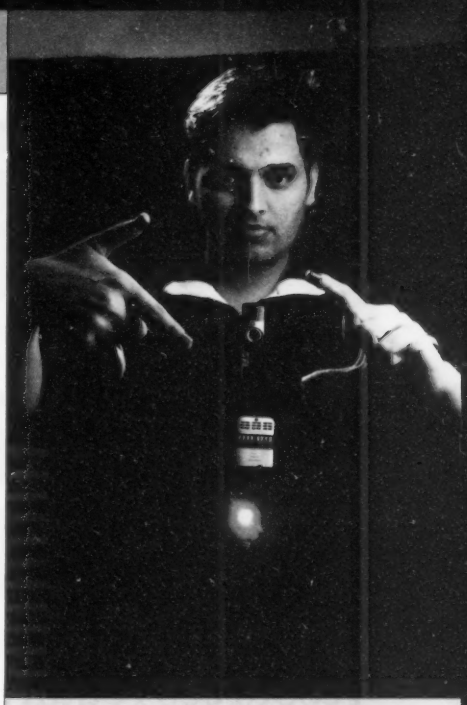
You will no longer need to store everything on a hard drive or transfer data to a USB stick, says Randy Adams, founder and CEO of Searchme Inc., a search engine company in Mountain View, Calif. "Mobile devices will be almost disposable, because information will be up in the cloud," he says.

However, tomorrow's PC will truly be personal, customized with the software you choose and the trove of personal data it will work with — including, among other things, credit card numbers, the electronic "keys" to your car and the biometrics that secure the whole package.

Such big changes won't take place overnight, of course, and the new technologies won't be adopted universally. After all, some companies are still using green-screen mainframe interfaces. "So in 2019, you may have a lot of applications that don't look a whole lot different than they do today," Killeen says.

And there are challenges on the path to the PC of 2019. The components of the future device will have to learn to communicate using Wi-Fi and Bluetooth. They'll also have to become smarter, "learning" to work under the confines of social conventions. (You don't want that wristwatch-style PC blurting out that it's time for your heart pills while you're meeting with the CEO, do you?) And they'll have to have appropriate verification and security layers, says Bill Buxton, a principal researcher at Microsoft Research. But all of this will come together in time, and it's already on the way.

"The PC of 2019 will look more like something that comes out of the iPhone than out of what we currently have on the desktop or laptop," says Michael Zyda, director of the GamePipe Laboratory and a professor of engineering practice in the Department of Computer Science at the University of Southern California. "The PC will fit in your pocket; it will have 10TB of online storage or more — the size of the entire Library of Congress."



**MIT Ph.D. candidate Pranav Mistry models a wearable projector that can display data onto any surface. Mistry interacts with the system using hand gestures and wears colored markers on his fingertips help the camera track movements and interpret his gestures.**

He calls this device "the context machine" and says it will know "your location [and] what you are probably looking for and will sense when a friend is nearby and remind you of their name and the last thing you spoke with them about."

The context machine will preload itself with the information you require, Zyda says, adding that "it will be your phone, your e-mail, your office, your social secretary and confidant, your entertainment center, your game machine."

It will just be part of life, he says, and it will be so personalized that "there will not be the artificial distinction between home and office device. It will be *your* device." ■

**Pratt** *is a* Computerworld *contributing writer in Waltham, Mass. Contact her at marykpratt@verizon.net.*

# Securing Your Virtualized Environment

## Protecting virtualized resources requires a mix of old and new security tactics. By John Edwards

VIRTUALIZATION promises to make IT departments more flexible, more efficient and — perhaps most crucial in these tough times — more frugal. But one advantage the technology doesn't provide is an escape from the need for strong security measures.

As soon as he began planning his Novell virtualization project, Noah Broadwater realized that he was looking at an initiative that would require both a continuation of existing security practices and an analysis of any perils that might be created by the new technology.

"It was evident that virtualization demanded a close look," says Broadwater, who is vice president of information services at New York-based children's media producer Sesame Workshop. "Above all, we had to make sure that we would be secure on all fronts."

Neil MacDonald, an analyst at Gartner Inc., says that virtualization is opening new doors for IT departments as well as for people who seek to tamper with critical data and services.

"Adopters can expect that virtualized software, like hypervisor software, will be attack targets," he says. "Therefore, virtualization security planning should be addressed at a project's inception."

### CRASH AND LEARN

With IT departments in today's crashing economy being asked to do more with less, virtualization's lure is becoming increasingly irresistible. But as some departments rush headlong toward the technology in an effort the stretch scarce dollars, the temptation arises to skimp on security.

Many thrifty managers believe that the same technologies currently used to protect conventional physical servers can simply be extended to virtualized environments. But MacDonald says that's a potentially calamitous assumption. He notes that the unwary could be trapped by threats in several areas, including software, administration, mobility, the operating system and network visibility (see "Virtualization's Soft Spots," page 27). "There need to be policies to address these issues," he adds.

Broadwater takes some common-sense defensive steps, such as using firewall controls to limit user access and running a full array of security protocols and checks on each virtual server. In addition, Broadwater says he depends on his virtualization software vendor, Novell Inc., to supply a product that's resistant to intrusions and attacks.

He says he worries about "holes in the virtualization software itself — kernel attacks, someone attacking the host module or one of my guys making a mistake against the host server — and then making sure that the full virtualization software is actually secure and is patched."

Broadwater says he's confident that his vendor is keeping pace with virtualization threats as they arise.

He feels that beyond technology-driven measures, it's helpful for enterprises to keep details about virtual environments close to their vests in order to deter unwanted attention. "In a lot of cases, we don't even tell people that they're running on a virtual box or that they're actually accessing a virtual box," Broadwater says.

Oyvind Kaldestad, vice president of corporate IT at Lionbridge Technologies Inc., a business outsourcing and training company in Waltham, Mass., says his top concern is malware infections finding their way into his client enterprises' Microsoft-based virtual environments.

"I would be really worried about having a host or parent partition being able to access and cause a virus or other type of infection on a child partition — that would be a bad scenario," he says.

Kaldestad is also concerned about child partitions using virtualization to talk to one another and spread infections. But like Broadwater, he's confident

### TERMS DEFINED

**Hypervisor:** This virtualization platform allows the operation of multiple operating systems on the same physical computer.

**Parent partition/child partition:** In a Microsoft virtualization environment, the parent partition creates and manages the child partitions on which users create virtual machines and install guest operating systems.

**Slave DNS server:** In virtual Web hosting, a slave domain name server functions as a backup to the primary DNS server.

**VM:** A virtual machine is a software version of a computer that acts like – and looks to the network like – a separate physical machine.

that his vendor has a handle on the issue.

Steve Milligan, director of academic computing and technology at Arkansas Tech University, says that component segregation is vital to protecting his VMware-driven virtual desktop environment.

"We keep our virtual desktops separate from our production servers, and we keep our development servers separated as much as possible from our production servers," he says. "One of my biggest concerns is having a host or a VM that's compromised and allowing unwanted access to other systems within our environment."

Milligan acknowledges that he underestimated the security challenge when designing his virtualized environment. "Security was not on the forefront," he says. "We weren't thinking of designing our virtual environment any differently from our physical environment. That was a mistake, and we've learned from that."

Like many others managing a virtualized environment, Milligan would like vendors to provide more and better visibility tools.

"It's that unknown — not knowing what's going on in your virtual environment," he says. "Not just what's communicating with your servers from the outside, but what's going on internally between those virtual servers and desktops."

Although safeguarding virtualized environments requires new insights and practices, conventional security still plays a role. Like many experienced adopters, Broadwater says that virtualization security begins at the host.

"It's general security stuff," he says. "Make sure that your security patches are up to date and that you have proper antivirus [tools] that are sitting behind a proper firewall."

To further ensure that his virtual deployment is as secure as possible, Broadwater periodically turns to an outside security firm to probe the environment for lurking vulnerabilities. "We usually hire a company to do a security penetration test once a year," he says. "From the penetration test, we look at the vulnerabilities and go back to the vendors and ask them how they can help us resolve these issues."

Kaldestad says prospective virtualization adopters can get a handle on how vendors approach and manage security by carefully scrutinizing each provider's virtualization architecture.

"Try to figure out what type of attack vectors could possibly be used," he advises. "By looking at how things are architected, you can find out quite a bit about potential vulnerabilities."

## REALITY CHECK

Not all IT managers are losing sleep over virtualization security. Some feel that the issue is being hyped. They say that critics overlook the fact that most vulnerabilities are addressable and that many adopters are simply using virtualization to save money by consolidating low-priority — and low-risk — tasks.

Nicholas Tang, vice president of technology operations at Interactive One, the online division of the U.S.'s largest African-American radio network, says he believes that as long as critical data isn't sent into a virtualized environment, virtualization requires no special security protections.

> **We weren't thinking from the standpoint of designing our virtual environment any differently from our physical environment. That was a mistake, and we've learned from that.**
>
> DIRECTOR OF ACADEMIC COMPUTING AND TECHNOLOGY, ARKANSAS TECH UNIVERSITY

"We treat [virtualized servers] like standard servers and take standard good-practice measures, but nothing specific to the virtualized environment," says Tang, who uses Oracle VM technology to consolidate lightly loaded servers, such as slave DNS and utility servers.

Yet Scott Crawford, security and risk management research director at Enterprise Management Associates Inc., a technology research firm in Boulder, Colo., warns that it's still important not to be lulled into a false sense of security, since no enterprise wants to invite an attack or intrusion, even if the tasks being virtualized are relatively minor. "Nobody wants to be a victim and to have to clean up a mess," he says.

Milligan agrees. "Virtualization is a very exciting technology that offers IT managers a better way to manage some of their systems," he says. "But don't get too excited over the benefits and look past the security. That could be dangerous." ■

**Edwards** *is a freelance writer in Gilbert, Ariz. Contact him at jedwards@gojohnedwards.com.*

## VIRTUALIZATION'S SOFT SPOTS

**Gartner analyst Neil MacDonald identifies eight areas of potential weaknesses in virtualized environments:**

- **Virtualization software, such as hypervisors, which represent a new layer of privileged software that could be attacked and must be protected.**
- **Loss of separation of duties for administrative tasks, which can lead to a breakdown of defense in depth.**
- **Kludgy processes for patching, signature updates and protection from tampering for offline VM and VM "appliance" images. The process for developing, testing and certifying fixes is lengthy and cumbersome, leaving systems vulnerable.**
- **Patching and secure confirmation management of VM appliances where the underlying operating system and configuration aren't accessible, making it difficult for users to secure their environments without vendor help.**
- **Limited visibility into the host operating system and virtual network to find vulnerabilities and assess proper configuration.**
- **A restricted view into traffic among VMs for inspection by intrusion-prevention systems.**
- **Mobility. Mobile VMs will require security policies and settings to mitigate risk.**
- **Immature and incomplete security and management tools.**

**– JOHN EDWARDS**

In the state of Andhra Pradesh in India, the Byrraju Foundation uses virtual technology to deliver sophisticated health services to people in rural areas.

# Heart to Heart

## Innovative software brings diagnostic cardiac care to remote villages in India.

**By Mary K. Pratt**

MILLIONS of people live in poverty in the vast rural regions of India's Andhra Pradesh state. The country's tech revolution and subsequent economic boom apparently passed them over.

But the Byrraju Foundation had faith in technology and its ability to transform lives, even in the remote reaches of India.

The foundation aims to help build self-reliant rural communities by providing a variety of comprehensive services, including health care, education, environmental programs and the delivery of clean water. And its work harnesses IT to deliver increasingly complex services, such as virtual medical consultations and, now, virtual electrocardiograms and cardiac diagnoses.

"There was a crying need that wasn't being met at the village level. But we realized if we could not get the patient and the doctor together in the village, we could take the patient virtually to a doctor in the city," says Verghese Jacob, head of the foundation. "This was precisely the intervention we needed."

The *Computerworld* Honors program named the foundation the winner in the category for nonprofit organizations, for its innovative use of technology to deliver electrocardiograms, or EKGs, to rural Indians.

The foundation first focused on providing primary health care to rural communities before launching other initiatives designed to improve the lives of impoverished villagers.

Although these programs have reached many — to date, they've helped more than 3 million people in nearly 200 villages — the Byrraju Foundation saw opportunities to do more, particularly when it came to providing critical health care services.

The foundation already had doctors and nurses working in the villages, but Jacob says many villagers required specialized care

> **"We realized if we could not get the patient and the doctor together in the village, we could take the patient virtually to a doctor in the city.**
>
> HEAD OF THE BYRRAJU FOUNDATION

## AT A GLANCE

### The Byrraju Foundation

**HYDERABAD, INDIA**

The Byrraju Foundation was established in 2001 in memory of the late Byrraju Satyanarayana Raju, founder of the Satyam group of companies. It is a nonprofit organization that provides a range of services to help communities in rural India become self-reliant. The foundation has helped more than 3 million people in 185 villages in the state of Andhra Pradesh. It has 1,200 employees and 11,000 volunteers, 90% of whom live in the villages. It spends more than $8 million (U.S.) on projects annually; of that total, $3 million comes from trustees, and the rest is from external agencies, the government and user charges.

**PROJECT CHAMPIONS:** Joseph Thomas, who leads IT at the foundation; Dr. Srinivas K. Iyengar, lead partner and integrator for the foundation's health module; and IT project lead B. Swami Nathan of Satyam Computer Services Ltd.

**IT EMPLOYEES:** The foundation employs about a dozen IT workers and uses Satyam consultants for additional support.

**ROI:** The foundation doesn't look at dollar returns. Its real ROI comes from providing medical services to patients who would otherwise have difficulty accessing such care because of geographical and financial barriers.

that they could receive only in distant cities.

More specifically, many villagers needed cardiac care. A significant number of them had diabetes, hypertension and other heart-related conditions, and they had to travel hundreds of miles to urban hospitals for EKGs and follow-up consultations with cardiologists. Such trips could cost $25 or more and generally took several days — daunting prospects for people whose family incomes are often $1 a day.

"The result was that unless it was absolutely necessary, they postponed going to the doctor," says Dr. Srinivas K. Iyengar, lead partner and integrator for the foundation's health module.

Although the Byrraju Foundation already had some videoconferencing equipment to link rural health clinics to urban hospitals, Jacob says foundation officials believed that villagers needed more than virtual consultations. To meet that need, the foundation expanded its telemedicine program in 2007 beyond consultations to diagnostics as well.

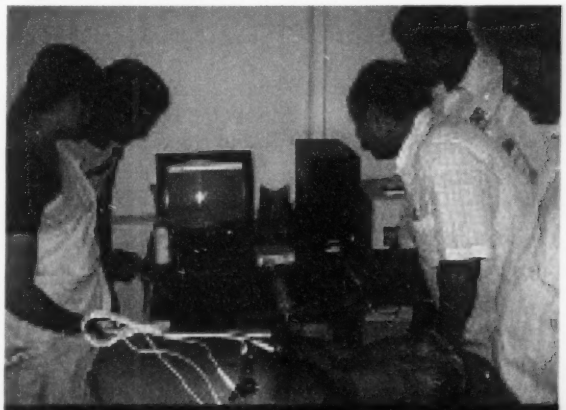
Today, the foundation has the capacity to perform EKGs on villagers in its rural health clinics and transmit the data to cardiologists, who then consult via teleconference with the patient — all at a fraction of the time and money it would take to provide the same services face to face.

Nurses in the villages connect probes from a computer to a patient to perform the EKG. When the test is completed, a Tele-EKG application, developed by Satyam Computer Services Ltd. and SN Informatics Pvt., sends the results to Narayana Hrudayalaya, a Bangalore hospital specializing in cardiac treatment. Within 15 minutes, a cardiologist provides analysis and recommendations for treatment or follow-up care.

Approximately 5,000 people have already undergone these virtual tests and consultations, Jacob says.

Villagers are pleased to have this service available to them, says Dr. K. Sivaji, a medical officer at the Byrraju Foundation. They recognize the importance of having easy access to potentially life-saving EKGs, and Sivaji says he believes such services should be part of every health center that the foundation establishes.

The foundation's success hasn't escaped the notice of other humanitarian organizations.



Using probes connecting a patient to a computer, an electrocardiogram readout can be sent to a cardiologist hundreds of miles away.

> **[Because of the cost of travel], unless it was absolutely necessary, [villagers] postponed going to the doctor.**
>
> LEAD PARTNER AND INTEGRATOR FOR THE FOUNDATION'S HEALTH MODULE

"The initial good response to the telemedicine work has resulted in further piloting of a more scalable model making use of data cards on mobile platforms," says John Borgoyary, program officer at the New Delhi-based poverty unit of the United Nations Development Programme. UNDP India has helped finance two of the foundation's information and communications technology projects for development.

### TAKING THE NEXT STEP

The Byrraju Foundation already had a strong base from which to build when it started its EKG initiative. It had provided its health centers with medical equipment, nurses and doctors. The group had installed teleconferencing equipment in many centers so its rural health care workers could consult with doctors at urban hospitals.

"Then we figured we could use the telemedicine for diagnostics. If you connect probes from the computer to the patient, the EKG can be sent to cardiologists in the city, and then both the doctor and the patient can see and talk to each other," Jacob says.

To coordinate this cardiac care between villagers and

city doctors, the foundation needed hardware and software that was reliable, functional and user-friendly, says Joseph Thomas, who leads IT at the Byrraju Foundation.

The foundation opted for a Satyam application that provides real-time collaboration through IP-based videoconferencing. The point-to-multipoint videoconferencing system is installed in more than 30 villages. According to foundation officials, this software is less expensive and more flexible than older, hardware-based videoconferencing.

The system works on a broadband wireless network based on 802.11b/g technology, Thomas says. The foundation built it with Media Lab Asia.

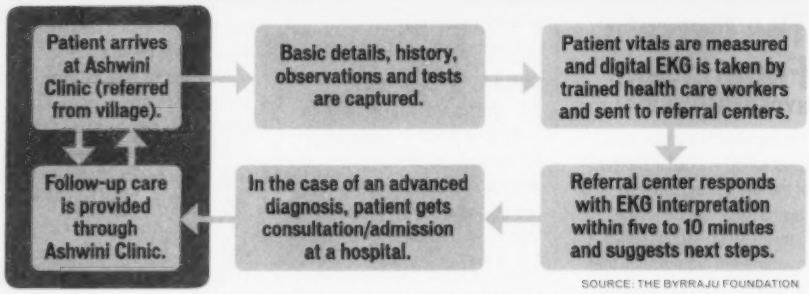
Thomas says the foundation's IT staff, along with Satyam consultants, developed the software to make all the pieces work together.

B. Swami Nathan, Satyam's IT point person for the Byrraju Foundation project, says the system consists of data-processing hardware and software at both the patient and doctor locations and essential diagnostic instruments, including the EKG machines themselves. The foundation chose EKG equipment from Schiller AG in Baar, Switzerland.

A server in a central site functions as the main data repository and controls the various patient locations. It processes data, images and video in accordance with health care standards. Patients and doctors then communicate through IP-based technology, Nathan explains.

It's a project that could be done only through IT, he adds. "Though the cardiac hospital provided its services gratis, the hardware and software enabled interpretation of patients' EKGs from remote locations, using the Internet as the key enabler," Nathan says.

## TELE-ELECTROCARDIOGRAM PROCESS


Patient arrives at Ashwini Clinic (referred from village).
Basic details, history, observations and tests are captured.
Patient vitals are measured and digital EKG is taken by trained health care workers and sent to referral centers.
Referral center responds with EKG interpretation within five to 10 minutes and suggests next steps.
In the case of an advanced diagnosis, patient gets consultation/admission at a hospital.
Follow-up care is provided through Ashwini Clinic.

SOURCE: THE BYRRAJU FOUNDATION

### LAST-MILE OBSTACLES

But, as with most technology implementations, the foundation faced challenges in delivering its virtual medical system, Jacob says. And it still faces challenges maintaining it.

In some areas, for example, the foundation had to provide the last mile of connectivity. "The information highway is still [being built] in India. We looked at the nearest fiber-optic links, and if it was close to the village, we could build it out; if not, we did mobile," Jacob explains.

Meanwhile, the foundation has to contend with occasional blackouts, network outages and fluctuations in bandwidth, Jacob says.

> **We looked at the nearest fiber-optic links, and if it was close to the village, we could build it out; if not, we did mobile.**
>
> HEAD OF THE BYRRAJU FOUNDATION

Despite these obstacles, the foundation remains committed to implementing EKG services at as many rural health centers as it can. As of the fall, the foundation offered those services in 46 centers, with most using broadband and others using Indian Space Research Organization satellite connections.

Jacob says he expects that 80 health centers will soon offer telemedicine services, including EKG diagnostics.

In the future, Thomas says, the foundation should benefit from the explosive expansion of India's mobile telecommunications infrastructure. He adds that the foundation should be able to extend telemedicine and telediagnostics capabilities to centers using mobile phones rather than building out the last mile of land-based connectivity.

As the expansion continues, the foundation plans to offer additional virtual diagnostic services using kits of medical equipment and computer hardware and software from Neurosynaptic Communications Pvt. in Karnataka, India, Thomas says.

To do that, foundation workers are already planning strategies for dealing with the challenges they encountered implementing the EKG offering. Thomas says the new diagnostic kits will be able run on renewable energy and backup batteries in case the health clinics lose power.

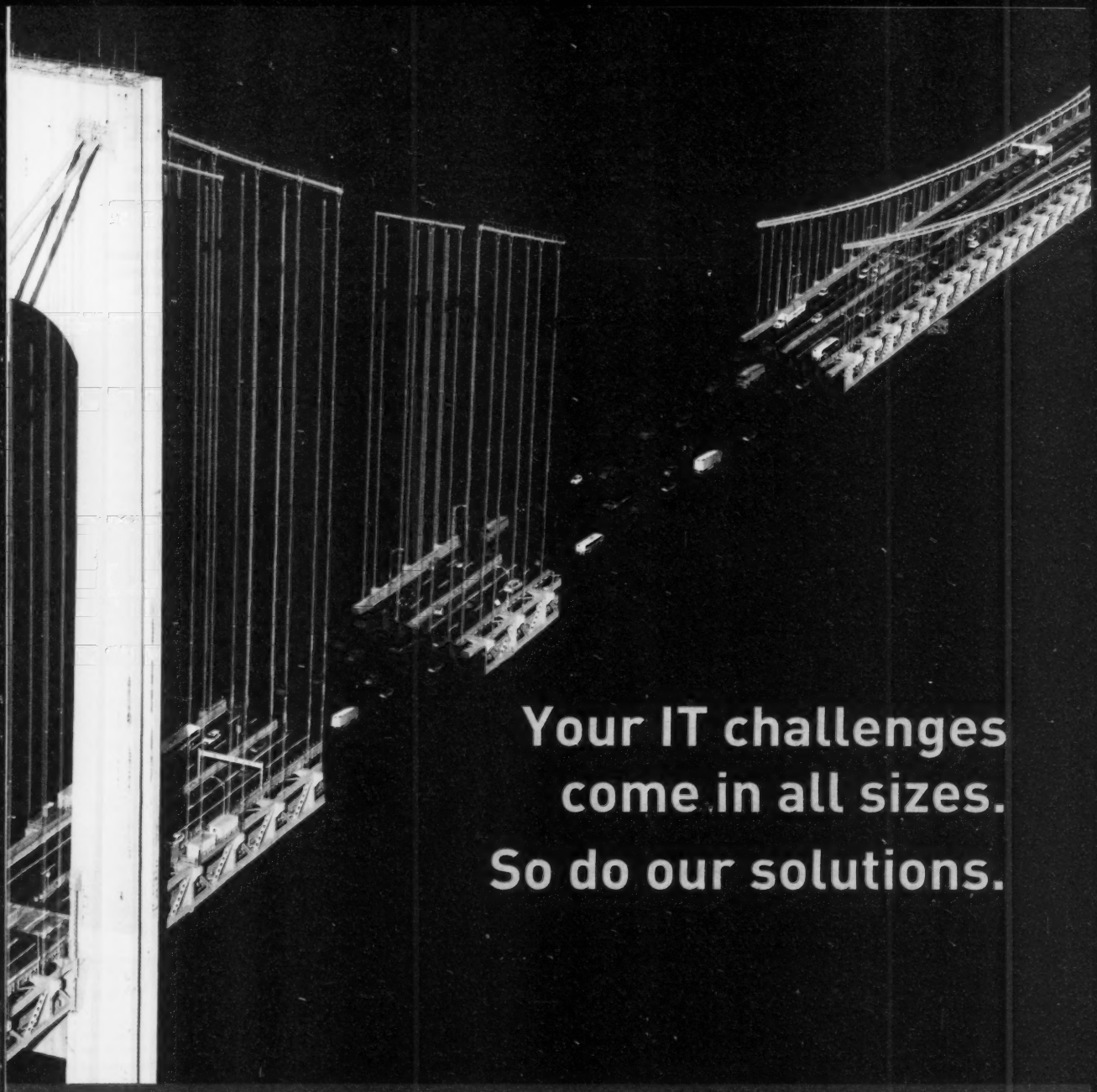
Setting up the IT infrastructure and Schiller EKG equipment costs approximately $6,000 (U.S.) per health care center, with most costs going toward hardware and connectivity, Jacob says.

The foundation doesn't invest in technology for financial gain, of course, but Jacob says the financial results are telling. Because the costs are relatively low, he says, the foundation can break even in less than a year — even if it charges patients only $1 each.

But the real return, Jacob says, is seeing the social gains made in villages because of the technology. He says more and more villagers are now getting the care they need; in some cases, the technology is even prolonging and saving lives.

"Every person should have access to the best health care. It should be a universal right," Thomas says. "And technology connectivity solutions can be used to bring this about." ■

**Pratt** *is a* Computerworld *contributing writer in Waltham, Mass. Contact her at marykpratt@verizon.net.*



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# Layoffs Put Security On the Back Burner

**Nearly half** of the security staff is **being laid off.** Will a bare-bones team be able to **protect the company's assets?**

THE WORST has happened. I have to cut almost half of my information security staff because, in this economy, the company is losing money faster than anybody anticipated. The cuts will include over a third of our global IT department, and even that may not be enough. We may need another round of layoffs if things don't get better soon.

This is going to have a devastating impact on our ability to provide services to the company and protect its assets. With a bare-bones staff, our IT department won't be able to roll out any new capabilities; all resources will be focused on keeping our technological lights on. It's amazing how fast things are falling apart. At this rate, I'll be lucky if there's a company to protect by the end of this year.

It's demoralizing. Despite my best efforts, I wasn't able to protect my staff, and now we're at risk of losing ground on everything we've accomplished. We spent all of last year establishing our fledgling information-security program. Things were starting to look up, but we can say goodbye to all that for now.

For example, we fought an uphill battle to get our IT organization onboard with patching our servers, and we were just starting to see some improvement. Previously, our servers were not being patched at all. They were just being built, deployed and forgotten.

Today, about 20% of our servers are being regularly patched. They were the lowest-hanging fruit — noncritical servers that were low risk. We were just starting to address the other 80% of our servers, but now I have grave doubts that they will be on a regular patch cycle anytime soon. It's even possible that we'll be unable to maintain the patching routine we fought so hard for.

**■ It's demoralizing. Despite my best efforts, I wasn't able to protect my staff, and now we risk losing ground.**

Given the gravity of our situation, we also won't be able to keep our outsourced third-party services. And my decimated staff, already a skeleton crew before the layoffs hit, isn't going to be able to pick up the slack. In effect, we simply won't be able to do much of anything that an information security department needs to do. Day-to-day operations are going to suffer, and I certainly don't know how we'll be able to find the time to design security for new projects. Oh well, that's something I probably shouldn't worry about too much, since chances are slim that there will be many of those this year. After taking one long, challenging step forward, we're taking two big, fast steps backward.

## TOO MANY REGRETS

I wrote in an earlier installment of this column about our budget not including funds for disaster recovery for new applications. I complained mightily at the time, but that now seems like one of my lesser worries. Again, how many applications will our overtaxed IT department be rolling out this year?

But this situation carries other regrets for me. Prevention of data leakage, which is something this company desperately needs, will have to go on the back burner because we can't afford to work on something like that right now. Third-party security audits are out the window, as are any other new capabilities that have a price tag attached to them.

Worst of all, of course, is dismantling my top-notch security team, which I painstakingly built up over the past 18 months and staffed with great people. Some will stay, but many must go. It's one of the most painful decisions a manager has to make.

I've been through this sort of thing before, but that doesn't make it any easier. In fact, it affected me so much last time that I swore off management for several years. This is a situation I wouldn't wish on anyone. Let's hope things get better before they get worse. ■

*This week's journal is written by a real security manager,* **"J.F. Rice,"** *whose name and employer have been disguised for obvious reasons. Contact him at jf.rice@engineer.com.*

## Trouble Ticket

**AT ISSUE:** Layoffs are ordered, and there's no guarantee that there won't be more.

**ACTION PLAN:** Take stock of what the smaller team can still manage to do.

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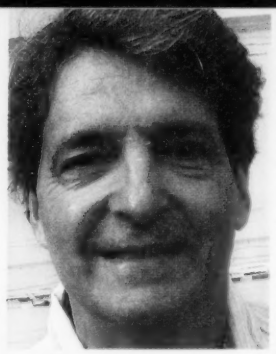
■ OPINION

Preston Gralla

# Google: The Next Evil Empire?



AMONG MANY of the tech cognoscenti, Microsoft has been portrayed much like the evil Galactic Empire in *Star Wars*: a tyrannical regime bent on conquering the universe for its own nefarious ends.

Google, on the other hand, has been seen as having the spirit of a can-do band of rebels, relying on its guile and innate goodness to fight the evil empire.

My, how times have changed.

Today, Google resembles no company so much as it does Microsoft in its global ambitions, its clear-eyed focus on the bottom line and — for the first time — a host of critics who fear that the company's reach has grown too long, its grip on the market too strong.

In fact, fears about Google's market power have grown so markedly that sometime in the next four years, you may well see an antitrust suit launched against Google by the U.S. Department of Justice to rein in the power of the Silicon Valley search king.

To understand why Google may be the target of an antitrust suit, listen to Christine Varney, nominated by President Barack Obama to be assistant attorney general for antitrust at the Justice Department — in other words, the nation's next antitrust czar.

On June 19, 2008, well before the election, Varney participated in a panel discussion sponsored by the American Antitrust Institute. According to the Bloomberg news service, she warned that Google, not Microsoft, presents the greatest antitrust danger in the 21st century.

"For me, Microsoft is so last century. They are not the problem," she said, adding that our economy will "continually see a problem — potentially with Google," because it "has acquired a monopoly in Internet online advertising."

Varney warned that Google may present other dangers as well, particularly in cloud computing. The company is "quickly gathering market power in what I would call an online computing environment in the clouds," she said.

**■ Today, Google resembles no company so much as it does Microsoft.**

Lest anyone miss her point about Google, Varney added, "When all our enterprises move to computing in the clouds and there is a single firm that is offering a comprehensive solution, you are going to see the same repeat of Microsoft."

To drive home her point, she said that in the same way that companies complained about Microsoft's domination in the days before the antitrust suit against it, "there will be companies that will begin to allege that Google is discriminating" against them by "not allowing their products to interoperate with Google's products."

This is not idle talk. Varney has long experience with antitrust suits and technology. In fact, she was a lobbyist for Netscape and pushed President Clinton's Justice Department to sue Microsoft for violations of antitrust laws.

Before that, she had been a member of the Federal Trade Commission under Clinton. While there, she was a vocal proponent of online privacy, calling for industry privacy standards and for the government to increase its enforcement of privacy laws. Given that many people fear that Google has amassed far too much private information about Internet users, this isn't good news for the company.

There's no guarantee that there will be a Google antitrust suit, of course. Varney made her statements before she was nominated to be the country's antitrust chief. She may well change her mind once she starts her new job.

On the other hand, if I were a Google executive, there's one place where I'd be hiring instead of cutting back: the legal department. ■

**Preston Gralla** *is a contributing editor to* Computerworld.com *and the author of more than 35 books, including* How the Internet Works *(Que, 2006).*

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# Career Watch

**29%** **Percentage of people in their late 60s who were working in 2006, up from 18% in 1985,** according to the Bureau of Labor Statistics. The BLS also says that over the next decade, the number of workers 55 and older is expected to rise at more than five times the rate of the overall workforce.

## QUESTIONING THE QUESTIONERS

**At least 15% of the respondents to a survey conducted last year identified the following questions as among the most annoying they are asked during job interviews:**

- **"What are your worst traits?"**
- **"What would you say is your worst quality?"**
- **"What's the biggest mistake you've ever made?"**
- **"What are your flaws and failings?"**
- **"What irritates you about co-workers?"**

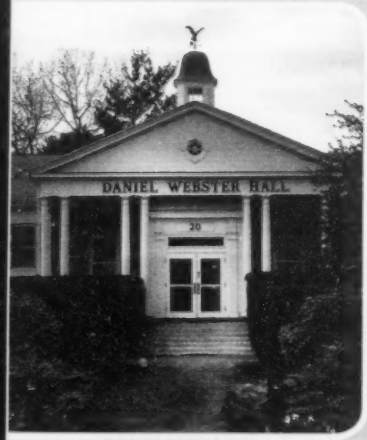
**Respondents also identified questions they wished they would be asked during interviews, including:**

- **"How can your specific experience benefit us?"**
- **"Describe the skills and talents you have that will help us."**
- **"What can you bring to this organization to improve it?"**
- **"In a nutshell, if we hire you, what will you bring of value to this organization?"**

SOURCE: 2008 HYRIAN SURVEY OF JOB CANDIDATES; OF THE 231 RESPONDENTS, 12% LISTED IT AS THEIR JOB CATEGORY OF HIGHEST INTEREST

# Business Meets Academia

**How U.S. colleges and universities are working with the private sector to develop next-generation IT leaders.**




**Daniel Webster College School of Business, Management and Professional Studies (SBMPS), Nashua, N.H.**

**Number of degrees awarded in spring 2008:** Undergraduate: 177; graduate (MBA): 42

**Does Daniel Webster have an IT advisory council?** The SBMPS has an advisory council that addresses all of its programs, including the MIS undergraduate degree program and the MBA in technology and innovation leadership. The advisory council, which is made up of industry leaders and entrepreneurs, provides insight and commentary on existing programs as well as the future direction of the school. Council members include industry and business leaders such as Richard "Dick" Morley of R. Morley Inc. and Robert Good of Good Leads.

Says Neil Parmenter, SBMPS dean, "The School of Business, Management and Professional Studies looks to these innovative, well-informed leaders for new program directions, modifications to our existing offerings to address current business needs, and to help us to provide the most valuable and relevant education possible to our students."

**What IT executive feedback has helped develop the curriculum?** The MBA in technology and innovation leadership promises to be one of the school's flagship MBA offerings, Parmenter says, since it addresses unfulfilled needs in today's business environments. The program came about with input from members of the school's advisory council.

The curriculum will include a core of proven management courses, plus five new offerings: economics of technological change, e-business and entrepreneurship, technological innovation management and strategies, new product design and development, and advanced human resource management.

The advisory council and an SBMPS task force have made a number of recommendations for both the undergraduate MIS degree program and the new MBA program. Offerings that have resulted or are currently being implemented include project management, social networking and strategic management of technological innovations.

"In addition," says Parmenter, "as we develop new programs such as an MBA in health information management, we expect the board will continue to play a very important role."

**Is there a review process by which the advisory council monitors the curriculum to ensure that it's current and relevant?** The SBMPS is developing a review process for all programs and courses within the programs. "Given that our advisory board is significantly made up of industry/business leaders, as well as entrepreneurs and venture capitalists," says Parmenter, "their recommendations are welcome and valuable."

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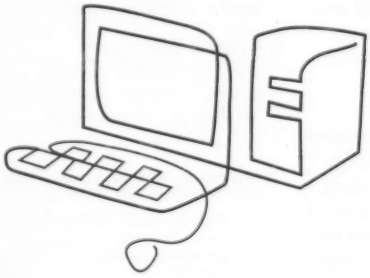

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# SharkTank

## TRUE TALES OF IT LIFE AS TOLD TO SHARKY

### Straight to the Point

This pilot fish's new responsibilities include editing Visio files that come from clients and colleagues. Problem: Fish has an older version of Visio, so he's constantly going to co-workers to convert files. Solution: Upgrade fish's Visio – a plan that fish's manager promptly approves. But a bean counter in the controller's office balks. "Bean counter said he just checked it out, and there's a free Visio viewer on the Microsoft site," says fish. "He wanted to know if I could use the free viewer along with my old program to do what I needed and thus avoid buying a newer version." Fish's reply: "Can you please help me understand how I can implement your idea of editing files using a viewer?" Reports fish, "I got permission to go ahead and buy a license."

### That Would Explain It

It's a few years ago, and this pilot fish works at a company that prints mortgage documents for home loans. "I and another fellow worked the graveyard shift," fish says, "inserting the documents into daisy-wheel printers, confirming that they printed correctly and bundling up the completed loan packages for delivery. We occasionally had to call for assistance from the programmers, waking them up in the middle of the night, and they'd walk us through various restarts, uploads and other highly technical – to us – procedures. One evening, I called the programmer on call, who gave me a procedure to do at the server. There was no phone in the server room, so I had to write down the directions, hang up and spend the next half hour trying to follow the directions. After failing for the last time, I called the programmer back and told him that this procedure wasn't working. The programmer said to me, 'Yeah, I know. After I hung up with you, I realized that wasn't what you needed to do . . .' "

### Pick One

Pilot fish at a medical claims clearinghouse is asked to research why a new client isn't getting reports back. "I looked into it and found out that their claims had never been loaded into our system because they could not generate valid claims electronically," says fish. "Because of this, we would not generate reports." Fortunately, there's someone who's specifically responsible for informing IT about any new clients having these kinds of problems. And who is that? "Exactly the same person who requested that I look into why the client was not getting the reports," grumbles fish. "So – two methods to find out what is happening: Open a help desk ticket and make three people spend over an hour researching the claims flow *or* look at the e-mail that he created."

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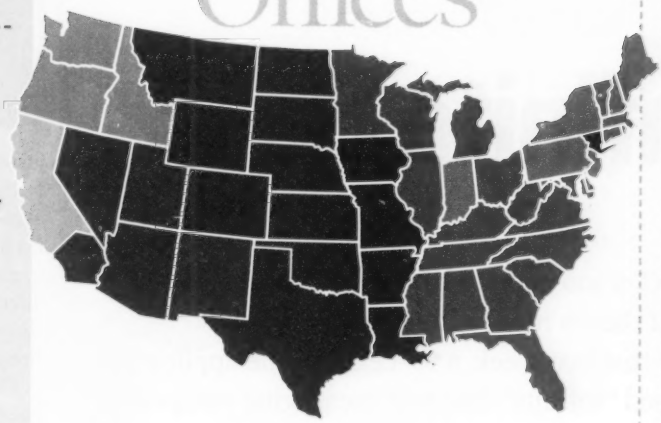

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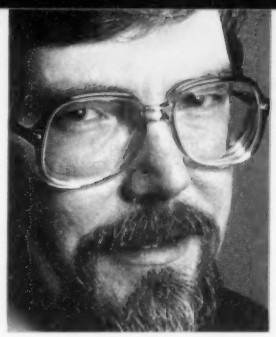
■ FRANKLY SPEAKING

Frank Hayes

# No Infinite Beer



IF IT SOUNDS too good to be true, it probably is — especially if there's money involved. So it should be no surprise that last week, a 99-cent iPhone application that promised "infinite" free text messaging stopped working. It turns out that texting was infinitely free only because Google was paying the bill.

And Google wasn't getting any money from the deal.

Not from users. Not from advertisers, who provide most of Google's revenue. Not even from sales of the app, called Infinite SMS, which was developed by two guys in the Seattle area calling themselves Inner Fence.

Here's what happened. In December, Google announced an experimental feature: the ability to send and receive SMS text messages for free through a Gmail client. Google even used standard interfaces so other software makers could create their own clients to use the service.

In February, Inner Fence launched its Infinite SMS app through the iTunes store. The idea was pretty simple: A user provides the log-in information for a Gmail account, Infinite SMS logs into Gmail and provides an interface for texting, and the user doesn't have to pay a stiff bill for sending text messages.

Infinite SMS quickly became very popular. Google noticed — probably the first time it got an SMS bill after Infinite SMS went on sale.

On March 9 — 25 days after Inner Fence launched its Google killer — Google informed the company that it would be turning off the free SMS service for non-Google apps. Two days later, Infinite SMS stopped working. (The free SMS feature still works with Google Chat, though.)

It's tough to feel bad for anyone involved here. Google offered free beer as an experimental feature; it had the right to turn off the tap. Inner Fence knew its promise of infinite beer depended on someone else's largess. And the Infinite SMS users paid 99 cents for all the beer they could drink — at least before the tap went dry.

**■ You probably have some users who depend on even kludgier arrangements than Infinite SMS.**

They really should have known it would.

Here's a more important issue: You probably have some users who depend on even kludgier arrangements than Infinite SMS.

Maybe they connect to office systems from home using their neighbor's Wi-Fi (perhaps without even realizing that's what they're doing). Maybe they're routing all their e-mail through Gmail, which went down again last week for some users. Maybe they lean heavily on instant messaging or Twitter or some other free service that could go away without warning.

And maybe you've encouraged them to do just that. In these days of free services and tight-as-a-drum IT budgets, it's tempting to tell users to go with freebies as an alternative to your IT shop's officially sanctioned technology.

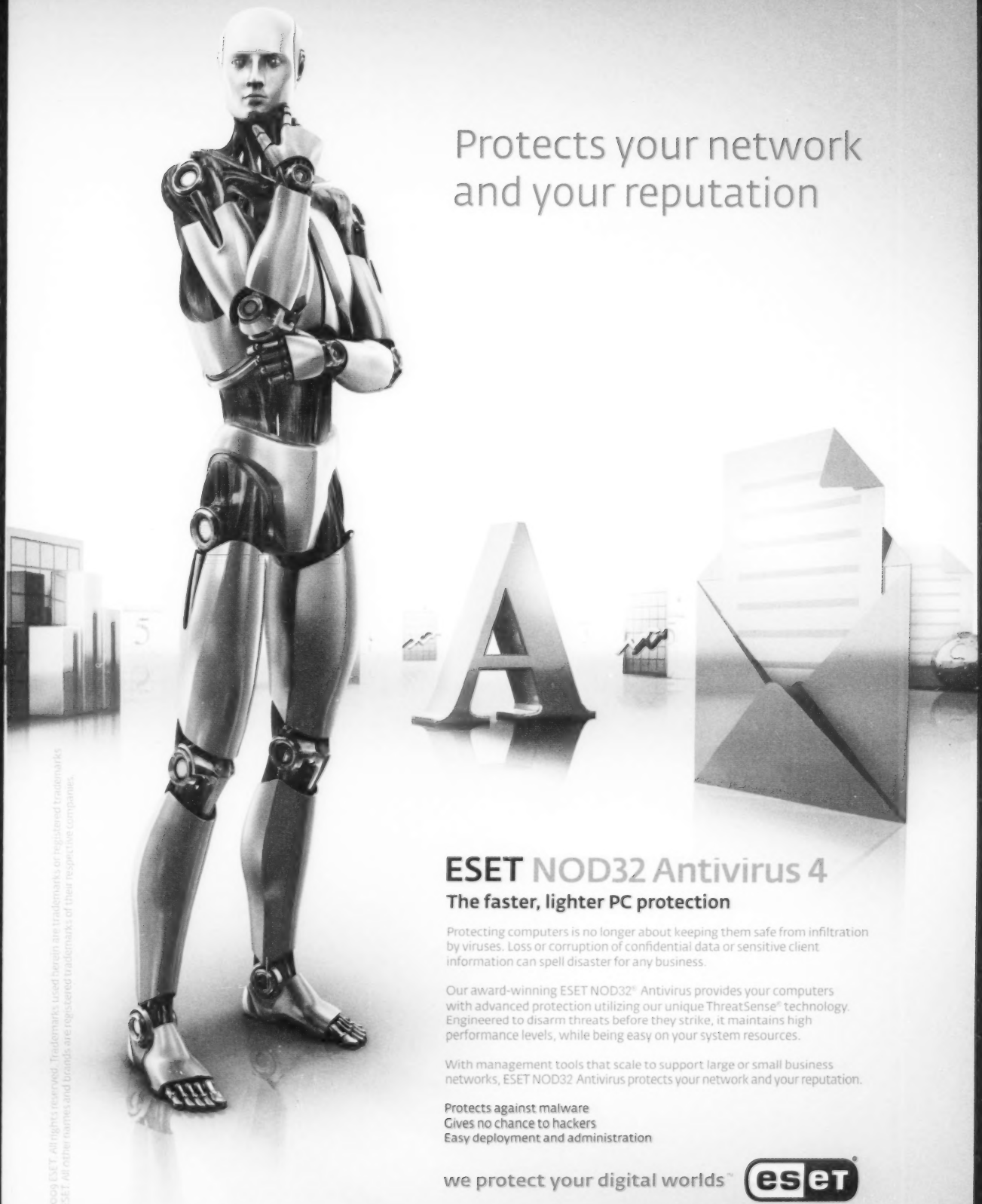
That may even be a good thing — *if* you've given the freebie a careful vetting, and *if* there's nothing mission-critical depending on it, and *if* security and confidential data aren't at risk. (Even then, Wi-Fi unintentionally provided by a neighbor is likely a bad idea.)

But even if a freebie is safe and usable, it's still worth remembering — and reminding users — that you're likely to get what you pay for. There's no uptime requirement for free services, no service-level agreement. They could go down without warning, whether as a result of technical issues, financial problems or some flaw in the business plan.

And it's probably worth remembering that no matter how infinite the promise of technology may be, somebody somehow has to pay the bill.

Otherwise, it *is* too good to be true. ■

**Frank Hayes** *is Computerworld's senior news columnist. Contact him at frank_hayes@computerworld.com.*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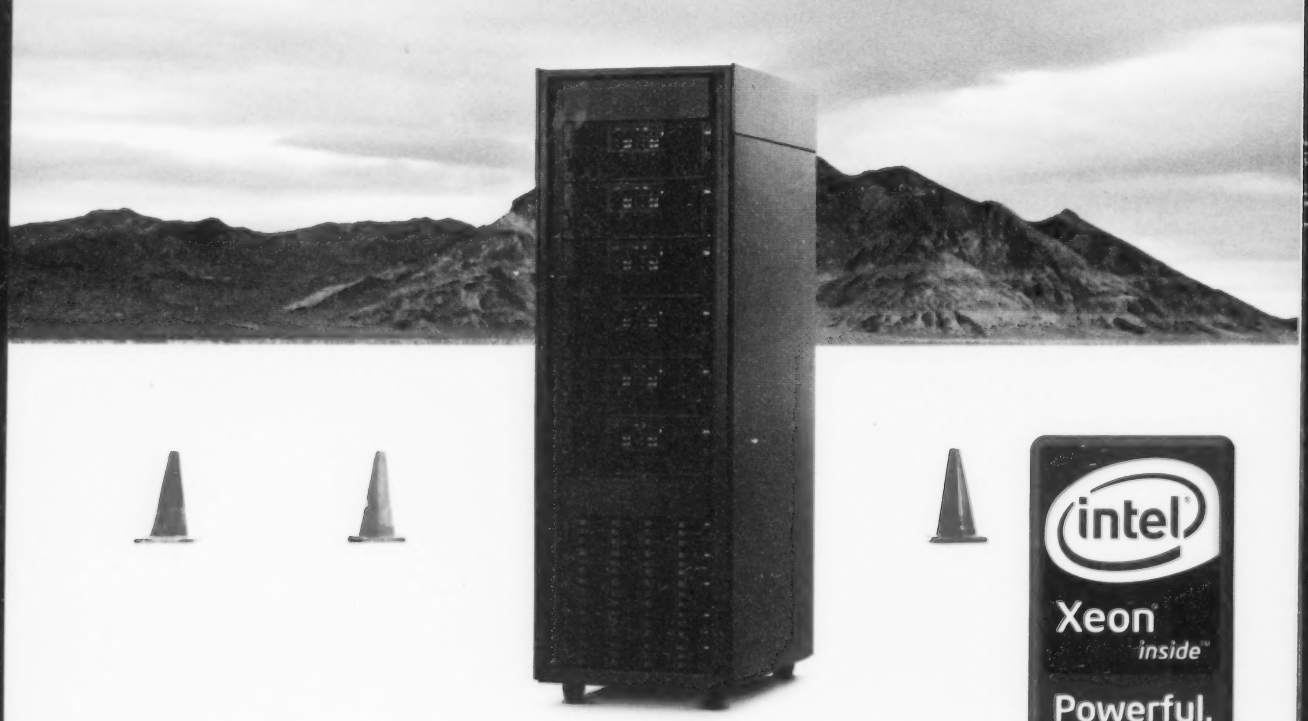

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